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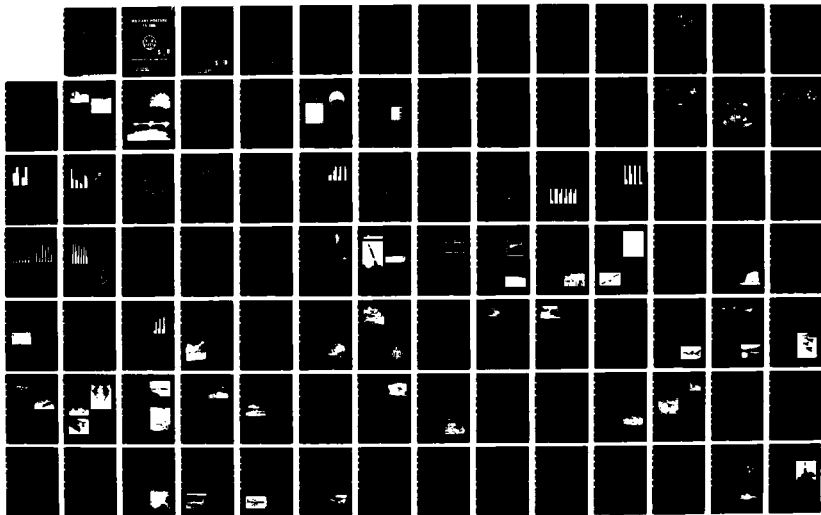
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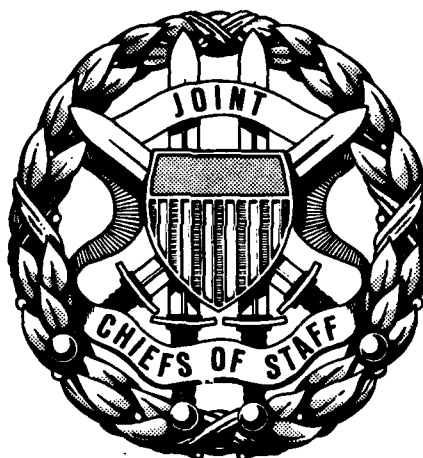
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# MILITARY POSTURE FY 1989

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# UNITED STATES MILITARY POSTURE FOR FY 1989

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## PREFACE

The primary purpose of this statement on the military posture of the United States is to supplement testimony by the Chairman and other members of the Joint Chiefs of Staff at congressional hearings in support of the FY 1989 Defense Budget.

Chapter I is an overview that describes the main challenges to US national security, outlines objectives and elements of US military strategy, and highlights continuing efforts to field the best possible armed forces for the protection of US national interests.

Chapter II compares US defense requirements and resource commitments with those of the Soviet Union.

Chapter III provides an overview of the global military environment by comparing US and allied forces with Soviet and Warsaw Pact forces.

Chapter IV assesses the current and projected capability of the US Armed Forces to meet the Soviet nuclear threat.

Chapter V assesses the current and projected capability of the US Armed Forces, in concert with friends and allies, to meet the Soviet conventional military threat. This chapter deals primarily with joint perspectives that have increased the capabilities and efficiency of our forces.

Chapter VI addresses other topics of interest.

Unless otherwise noted, data shown in this report have used operational as opposed to treaty inventories for strategic weapon systems, a fiscal year cutoff date of 30 September 1987, and mobilized forces. Additionally, data have been developed based on a global as opposed to regional war scenario.

Boundary representations are not necessarily authoritative. The United States does not recognize the incorporation of Estonia, Latvia, and Lithuania into the Soviet Union.

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# CHAPTER I. SECURITY CHALLENGES AND THE MILITARY POSTURE

## INTRODUCTION

The US Armed Forces protect and preserve the United States as a free nation. US forces help assure the physical security of the United States as a democracy and protect US interests abroad. The basic military strategy of the United States is to deter war. Accordingly, the defense policy of the United States requires military forces that are organized, manned, trained, and equipped to deter, and if necessary, defeat aggression across the entire spectrum of potential conflict. Although strong support by the Administration and Congress has improved our warfighting capability during recent years, much of this gain could be lost if adequate levels of funding are not sustained.

## MILITARY POSTURE AND GLOBAL REALITIES

The United States has many global interests and commitments. The sustained growth and complexity of Soviet military power, Eastern bloc and surrogate exploitation of regional conflicts, and instabilities in many areas of the world continue to challenge the security interests of the United States, its allies, and friends.

The Soviets continue to modernize their strategic nuclear, theater nuclear, and conventional forces and their capabilities for projecting military power. Together with clients and surrogates, they are attempting to weaken the ties between the United States and its allies and to extend their influence in the Third World. Soviet global ambitions further impede the peaceful resolution of Third World problems and contribute to regional instability in ways that promote wider conflict. Additionally, a persistent disregard of the norms of international law by nations seeking to export violence, groups engaged in subversive or terrorist activities, and underground cartels profiting from the international trafficking in drugs present a clear and present danger to U.S. lives and property, undermine efforts by still developing countries to achieve political and social progress under democratic forms of government, and endanger many of the "good neighbors" in world affairs. Overall, these destabilizing forces confront the United States with unique and exceedingly complex challenges to global peace and stability.

US military strategy seeks to deter attacks against the United States and its allies, limit Soviet capabili-

ties for coercion, and provide the flexibility to respond appropriately to aggression. Therefore, US forces must be capable of meeting regional challenges as well as threats of global dimension. Readiness, sustainability, and sound force dispositions are essential characteristics of the US military posture.

## Global Considerations

US interests are best pursued within a stable, peaceful international community. Armed conflicts, international terrorism, and regional instability adversely affect the United States and its allies with potential global implications. Comprehensive and imaginative integration of US and allied military capabilities is required to reduce risks to our national security. Since our political and social heritage militates against raising and supporting large forces in peacetime, the United States is impelled to seek security through technological innovation, national economic strength, and alliance cooperation.

The Soviet Union continues its efforts to influence international events by pursuing a correlation of military forces more favorable to the USSR over the long term, engaging in psychological warfare against Western governments and leaders, seeking and exploiting divisions within the Western alliances, furnishing massive military assistance to Third World nations committed to revolutionary or expansionist foreign policy goals, and intervening in countries, as in Afghanistan, to shore up communist governments lacking a popular mandate.

The continuing Soviet buildup of nuclear and conventional forces, despite negotiations, has global significance. Soviet military capabilities have put great pressure on US and allied defensive strategies and threaten international stability. The United States and Soviet Union could inflict unprecedented damage on each other by the use of strategic nuclear forces. Nevertheless, the Soviets have continued to develop strategic offensive and defensive capabilities in an effort to reduce the credibility of the US deterrent, increase the options available to the Soviet leaders, and diminish the options open to the United States and its allies. The Soviets' heavy dependence on military capabilities, along with their expansionist policies, continues to threaten the North Atlantic Treaty Organization (NATO) and serves to maintain pressure on the Eastern bloc to ensure Warsaw Pact cohesion. In addition, the Soviet Union has continued

to broaden the scope of its military activity outside Europe, as shown by its aggression in Afghanistan; extensive maritime operations, especially from facilities in Vietnam, the Peoples Democratic Republic of Yemen, and Ethiopia; and the accelerated buildup of air, ground, and naval forces in the Soviet Far East and the Pacific. The Soviets continue to expand their use of space for military purposes. These activities, along with increased Soviet support and employment of surrogates throughout the underdeveloped world, confront the West with challenges.

### **Implications for US Strategy and Forces**

US military strategy is designed to meet and deal effectively with the challenges to US security interests. Such interrelated factors as US-USSR relations, relative strengths and weaknesses of major nations, global military balance, arms control agreements, and current regional military situations must be considered in the formulation of strategy and the development of forces to support it. US military strategy and force levels must be adequate to confront a wide range of challenges, from low-intensity conflict to threats involving modern conventional and nuclear forces.

### **US MILITARY STRATEGY**

The security requirements summarized above form the basis for US military strategy to support the more comprehensive national security objectives. The US military strategy seeks to deter war while maintaining a secure democratic environment within which the United States, its allies, and its friends can pursue legitimate interests. *This strategy of deterrence is rooted in a national commitment to peace and freedom.*

### **Elements of the Strategy**

The fundamental elements of US military strategy are nuclear deterrence supported by negotiated arms reductions and the investigation of defensive potential through the Strategic Defense Initiative (SDI); strong alliances; forward-deployed forces; a strong central reserve; force mobility; freedom of the seas, air, and space; effective command and control (C<sup>2</sup>); and timely and accurate intelligence.

### **Nuclear Deterrence With Arms Reduction**

The fundamental objective of US nuclear forces is to remove all incentives for direct attack against the United States and its allies by maintaining the capability to deny the Soviets their objectives under all circumstances and unacceptably damage the most valuable Soviet assets. The Soviet Union has continued to challenge the US guarantee of effective

retaliation and has threatened US deterrent capabilities by strengthening certain measures of Soviet nuclear strength. To counter growing Soviet nuclear warfighting potential, the United States places high priority on the modernization of its nuclear forces and their associated C<sup>2</sup> systems and, under the SDI program, on the development of a means for defending against ballistic missile attack. In the long term, SDI may signal a fundamental change in the US nuclear strategy from deterrence based solely on offensive nuclear forces to that of a balanced deterrence of both offensive and defensive systems. Equitable and verifiable arms reduction agreements are being pursued in parallel with modernization programs. The goal of the United States is a more stable nuclear balance at lower levels of armament.

### **Strong Alliances**

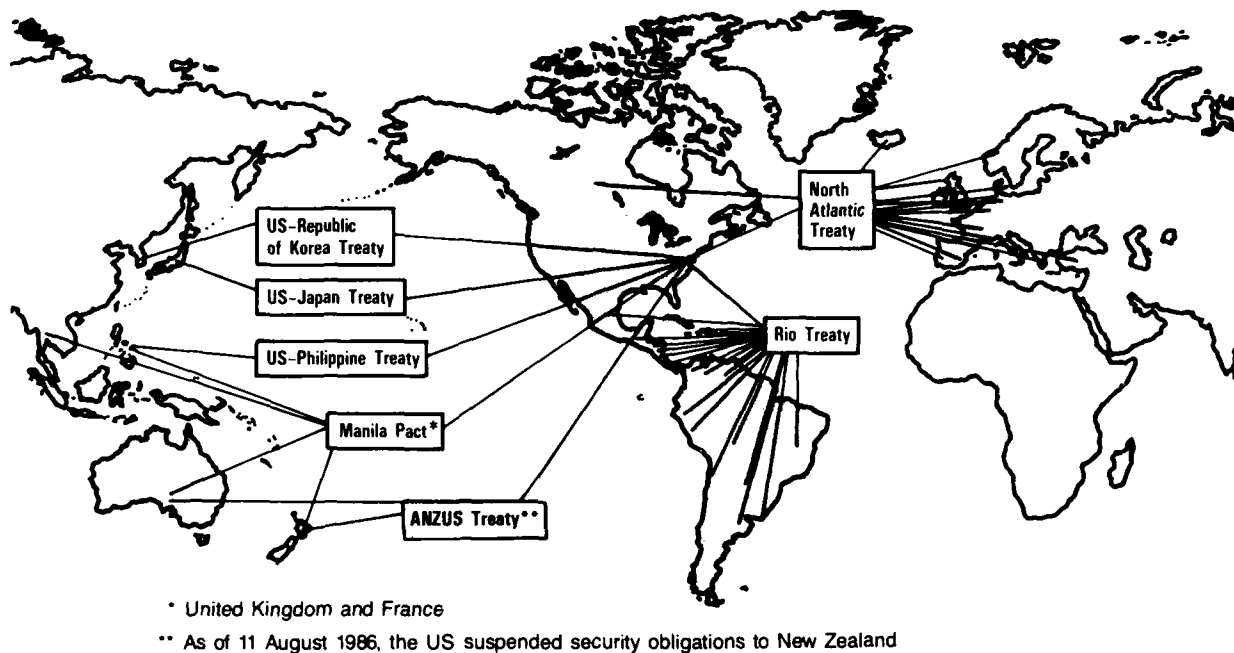
US military strategy is based on a system of strong alliances (Figure I-1). The shared values and combined economic strength of friendly countries provide a firm basis for effective collective security among the NATO nations, Pacific nations, and US allies elsewhere. Interests of the United States and its allies may not always coincide.

In this period of challenges to the nuclear balance between the United States and the Soviet Union, conventional military forces have become increasingly important. The Warsaw Pact has fielded large armed forces with modern conventional, chemical, and nonstrategic nuclear weapons. The United States alone does not match these forces in numbers. US allies make a significant contribution to deterrence by providing weaponry, well-trained manpower, facilities, and control of key geographical areas, thereby enabling the Free World to meet Soviet challenges.

The United States, with its NATO allies, is pursuing increased stability at lower levels of forces in Europe's Central Region through the NATO-Warsaw Pact Mutual and Balanced Force Reduction (MBFR) talks. More openness, regarding the activities of military forces, exists in the 35-nation Conference on Security and Cooperation in Europe (CSCE). The United States is also committed along with its allies to begin new discussions of conventional reductions in the area from the "Atlantic to the Urals." Chapter VI contains a more detailed analysis of current arms reduction negotiations.

The United States and its Pacific allies continue to employ a peacetime strategy that contributes to a stable and democratic political environment and

## United States Collective Defense Arrangements



As of 30 September 1987

FIGURE I-1

minimizes Soviet influence on Third World nations in the Pacific and Indian Oceans basins. Our peacetime forward-deployed forces in the Pacific maintain a high state of readiness through combined and joint training exercises and serve as a strong deterrent to Soviet Pacific ambitions. Our Pacific security assistance program strengthens relationships between Pacific nations, enhances interoperability of forces essential to combined operations, improves capacity for our own defense, and effectively counters Soviet influence.

### Forward-Deployed Forces

A key factor in the success of US alliances is the forward deployment of military forces. These forces demonstrate the US commitment to the common defense and serve notice that an attack will be met immediately by US opposition. In peacetime, the American presence among allies reduces the coercive potential of Soviet and Soviet surrogate military threats and facilitates early reinforcement in crises. If deterrence fails, sufficient forward-deployed forces can facilitate an effective combined defense.

### Central Reserve

The majority of US nuclear and conventional forces

are based in the United States. The readiness and preparedness of these forces to deploy contributes to deterrence of major conflict. These forces provide the capability to reinforce and sustain forward-deployed forces in combat and help deter or contain conflicts in areas of interest where the United States has no permanent military presence.

### Force Mobility

In order to project US military power globally, US forces must maintain a high degree of mobility. The successful implementation of US strategy requires highly capable airlift, sealift, and aerial refueling forces. Additionally, overflight arrangements and access and use rights for overseas bases, airfields, ports, and staging areas contribute to deployment flexibility and efficiency. Other important components of US reinforcement are the establishment of host-nation support to reduce the requirement for combat service support and pre-positioning of supplies and equipment in certain areas to reduce dependence significantly on strategic lift for deploying force equipment and sustainment supplies.

### Freedom of the Seas, Air, and Space

Freedom of navigation and access to space are



inherent elements of US military strategy. Unimpeded use of the air, the seas, and space allows support and reinforcement of forward-deployed forces, enables US and allied forces to operate worldwide, and underwrites interdependent commerce for the US and its allies.

Freedom to operate in space is a modern military requisite. The United States depends heavily on satellites for early warning of missile and space attack, weather data, navigation, surveillance, communications, and C<sup>2</sup>. Significant improvements to existing capabilities and procedures will be required to ensure uninterrupted US use of key space assets.

### **Command and Control**

C<sup>2</sup> is imperative to the successful employment and most effective use of US military forces. C<sup>2</sup> systems must be secure and as survivable and enduring as the forces they support and must have the requisite interoperability for joint and combined operations. These systems provide the essential link between the National Command Authorities (NCA); Chairman, Joint Chiefs of Staff; commanders in chief of unified and specified commands (CINCs); and the executing forces. Survivable facilities and systems that operate effectively during all phases of conflict add to deterrence and are vital should deterrence fail.

### **Intelligence**

US military strategy depends heavily on accurate and timely intelligence for warning and the effective employment of military forces. Such intelligence increases the likelihood that forward-deployed and reinforcing forces will deter conflict or defend successfully and maximizes the potential of modern weapon systems.

### **Applying the Strategy**

US forces are not available to defend simultaneously against every threat with equal strength. Nonetheless, the United States must make it clear that its interests will be defended and its obligations to allies will be met. US force employment planning considers the fundamental tasks that must be accomplished and the need to retain flexibility to meet other contingencies that threaten US security interests. US strategy also depends on effective operations security (OPSEC) to protect US capabilities and intentions from exploitation by unfriendly powers.

Should deterrence fail, US military forces will undertake missions to defeat aggression against the United States, its allies, and friends and achieve US

objectives swiftly. US forces would seek to limit the scope of any conflict and avoid the use of nuclear weapons without sacrifice of basic US objectives.

Sound military doctrine is essential to the successful implementation of US strategic concepts. Joint doctrine ties together the capabilities of the Services, guiding the unified development, deployment, and employment of forces. Effective joint doctrine helps prevent duplication and gaps in Service capabilities and aids in executing plans. Likewise, combined doctrine provides a standardized reference for military operations with our allies, enhancing interoperability and effectiveness.

The CINCs execute military operations in support of national objectives. They command the forces assigned to them in both peace and war and have regionally or functionally oriented responsibilities. The major commands are designated as either unified or specified. Unified commands are composed of major forces from two or more Services and have a broad continuing mission to plan and, if necessary, to execute military operations in support of US national security objectives. Although not technically a unified command, North American Aerospace Defense Command (NORAD) functions in a similar manner because of its binational nature. A specified command is one with a broad continuing functional mission and is usually composed of forces from one Service. Figure 1-2 identifies the unified and specified commands and their areas of responsibility.

The Services provide forces to the CINCs and support those forces. Although the CINCs are not directly responsible for individual Service unit training and the equipping of these forces, they are responsible for joint training. The CINCs play an expanded role in the DOD resource allocation process. The Joint Chiefs of Staff, together with the Chiefs of the Services and the CINCs, continue to implement several joint programs with the goal of increased Service interoperability, improved joint warfighting capability, and more efficient management of limited resources.

Under broad policy direction from Washington, the CINCs have the latitude and full authority to organize assigned forces as necessary to accomplish their missions. They also have full authority to delegate operational control and aspects of their operational command authority to subordinates. Service components are required to communicate through the CINC on matters over which he exercises operational

## **Commanders' Areas of Responsibility\***



\* MAC will be disestablished as a specified command when common-user transportation forces of its components are assigned to USTRANSCOM and USCINCPAC certifies that the command is fully operational.

Boundary representation is not necessarily authoritative.

As of 30 September 1987

**FIGURE I-2**

command and to inform him on other matters as he may direct; furthermore, CINCs exercise approval authority over assignments of individuals in key staff positions and of immediate subordinate commanders. The CINCs have directive authority for Service programs within their commands in the field of logistics to ensure effective execution of approved operational plans, effectiveness and economy in operations, and prevention or elimination of duplication. Options now exist for shortening the chain of command during contingencies short of war and providing the flexibility to deal with situations that overlap established boundaries between commands.

The CINCs now have a more effective voice in each phase of the Planning, Programming, and Budgeting System (PPBS). This evolving role has resulted in moving CINC warfighting requirements to the forefront of our resource allocation deliberations. This role is periodically addressed to ensure the continuing responsiveness of the unified and specified commands to meet national security requirements. Departmental directives now provide the CINCs with

greater authority and allow for their participation without diverting their focus from the primary tasks of deterrence and warfighting.

As directed by the President and the Secretary of Defense, these revised policies and procedures clarify authority and responsibility, improve responsiveness, and enhance control and flexibility for the CINCs and the NCA. The changes codify, strengthen, and broaden existing practices within the Department of Defense and significantly enhance the application of US military strategy.

The US strategy is designed to capitalize on the durable strengths of the United States: its political and social values, diversified economy, advanced technology, and the will and ingenuity of its people. To succeed, US strategy will continue to require the help of supportive allies and remain adaptable and responsive to a changing world.

### **Competitive Strategies**

Since World War II, the US has been confronted

with an open-ended build up of Soviet military power. Competitive strategies seek to deny the Soviets political, economic, and military leverage from this power by exploiting their inherent weaknesses and emphasizing enduring US strengths across the spectrum of potential conflict. Particular attention is focused on asymmetries in geography, critical nodes in communications or logistics support, evolving military technologies, and potential break throughs in research, development, and manufacturing processes. This strategy is designed to stress our broad-based qualitative advantage in a resource-constrained environment. Further discussion of this effort can be found in Chapter VI.

### **Low-Intensity Conflict Strategy**

The US national strategy seeks to promote democracy and foster economic growth in developing nations. In some regions, the stability required to sustain democratic and economic development is threatened by insurgencies, state-sponsored terrorism, and the international trafficking of illicit drugs. If not countered with a long-term US commitment and a forward-looking US strategy, the threat of low-intensity conflict (LIC) can erode a climate of peace and stability in the world at large, frustrate cooperative approaches to social and economic progress in the Third World, and undermine a globally interdependent economy. Thus, the US is meeting this challenge with a wide spectrum of initiatives: a firm counter-terrorist policy and posture, political and economic support for nations struggling to arrest a real decline in per capita income, security assistance for governments confronted with the stress of subversive forces and illicit trafficking in drugs (often occurring simultaneously), international peacekeeping operations, and support for resistance movements seeking to reverse a seizure of power by totalitarian governments supported largely by the Soviet Union and its surrogates.

A primary role for the US Armed Forces in LIC is to support and facilitate the security assistance program. Usually, this assistance will consist of technical training, logistic support, and small-scale bilateral or multilateral exercises. However, US armed forces also must stand ready to provide more direct forms of support in response to specific contingencies threatening US lives and property or the national sovereignty, political independence, or territorial integrity of nations seeking to live in peace. As a general rule, US forces are likely to be introduced into a LIC situation only as a last resort and when vital national interests cannot otherwise be adequately protected.

### **PROGRESS MADE**

The warfighting ability of our nation's military forces has continued to improve. These enhancements encompass all aspects of military capability: readiness, sustainability, modernization, and force structure efforts. This is due primarily to investment decisions made in 1982-1985. Although new equipment is still coming out of the pipeline, much of this gain in military capability could be lost if funding cuts to the Defense budget continue.

The force structure within which US military forces are organized continues to change, giving the balance needed to maintain the capability to respond at various levels of conflict. The Army has moved toward a 28-division structure that has a better balance of light and heavy forces. The number and capabilities of US Navy ships have increased to meet expanding maritime requirements, and Air Force structure provides greater fighter and strategic bomber aircraft capabilities. Modern equipment and organization enhancements have improved the Marine Corps' amphibious forcible entry capability. This improved force structure needs modern equipment to meet the threat. Equipment from the strategic level to the very personal area of ground combat is being modernized, and inventories are being increased. Specifics are addressed in subsequent chapters.

Because of funding constraints and equipment transition periods, modernization benefits will be distributed over the next several years. Training with evolving joint tactics makes our units more robust and allows fewer forces to protect more. Readiness efforts, on the other hand, have produced steady and measurable improvements as a result of the 1982-1985 investment decisions. Mission-capable rates of aircraft, the number of sorties and aircraft utilization rates, and capabilities in strategic warning and attack assessment have all increased. The readiness of US military forces to execute assigned tasks is at a high state.

One important factor that influences preparedness to respond to threats is sustainability. Both ammunition and missile inventories have been increased, though shortages, particularly in modern munitions, still exist. Aircraft sortie rates have also improved as a result of increased spare parts. Redundancy of C<sup>2</sup> systems and increased electromagnetic pulse (EMP) hardening of strategic time-sensitive sites have enhanced survivability and thus contribute to sustaining C<sup>2</sup>.



**AEGIS GUIDED MISSILE CRUISER**

The key, however, to mission accomplishment is the men and women who have chosen to serve. The quality of men and women in the US Armed Forces has never been higher.

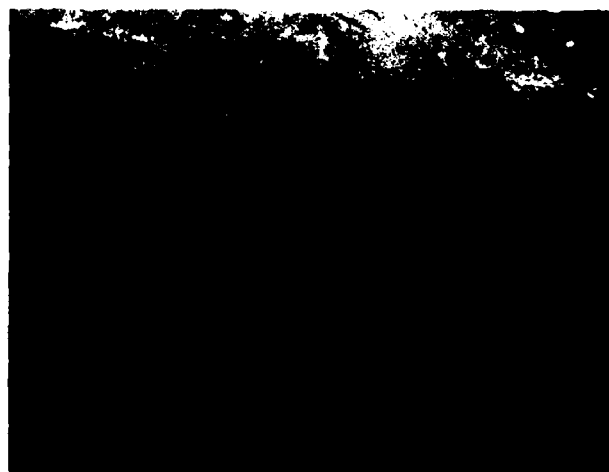
The combination of good people and effective programs has made US forces more professional, reliable, and capable. The continued support of Congress and the American people will be critical to maintaining improvements in military preparedness.

### **PREPARING FOR THE FUTURE**

The proposed defense program for the fiscal year (FY) 1988-1989 Budget and the FY 1988-1992 Defense Program will have a significant impact on the readiness, sustainability, modernization, and force structure posture of US military forces. Fiscal constraints will cause modernization efforts to be stretched out over a longer period of time, force structure to be diminished, and training and support activities for our forces to be reduced. The net result of these reductions will erode the qualitative edge of our military posture and diminish past trends toward risk reduction relative to the projected threat. Adequate resources must be provided to ensure that our essential warfighting capabilities are not impaired and that we continue to provide a credible deterrent.

The United States continues to place a high priority on the modernization of its strategic forces and their associated C<sup>2</sup> systems. The aim of this vital effort is to make C<sup>2</sup> systems more survivable and enduring while maintaining and improving all legs of the Triad. The development and deployment of the PEACEKEEPER missile, deployment of rail garrison

basing for the second 50 PEACEKEEPERS, TRIDENT II (D-5) submarine-launched ballistic missile system (SLBM), B-1B, B-2, AGM-86B air-launched cruise missile (ALCM), advanced cruise missile (ACM), and improved short-range attack missile (SRAM II) will make the US strategic deterrent more effective, survivable, and reliable. These nuclear weapon modernization programs are important contributions to deterrence and enable the United States to enter meaningful arms reduction agreements.



**B-1B**

A major effort is under way to develop the technology for a defense against ballistic missiles. Under the President's SDI, research is being conducted on potential technologies that might provide an effective defense against ballistic missiles.

Concurrently, modernization of nonstrategic nuclear forces (NSNF) continues with the deployment of modernized field artillery warheads and the fielding of sea-launched nuclear TOMAHAWK land-attack cruise missiles (nuclear) (TLAM/N). Improved C<sup>2</sup> will increase the survivability, flexibility, and deterrent capability of deployed NSNF.

The modernization of conventional forces and their associated C<sup>2</sup> systems is another key objective of the US defense program. Land forces are undergoing organizational changes to improve their flexibility and maximize the effectiveness of recently introduced or improved weapons, such as the M-1 (ABRAMS) main battle tank, M-2/M-3 (BRADLEY) fighting vehicle, AH-64 (APACHE) and UH-60 (BLACK-HAWK) helicopters, multiple-launch rocket system (MLRS), and PATRIOT air defense system. New

C<sup>2</sup> systems, such as Mobile Subscriber Equipment (MSE) and the Army Command and Control System (ACCS) will provide the requisite C<sup>2</sup> improvements to effectively employ these new weapons systems. As a result of organizational improvements, the Army's 17 Active component (AC) and 9 Reserve component (RC) divisions have been restructured to 18 AC and 10 RC divisions.

The United States continues to build toward a 600-ship Navy with 15 carrier battle groups, 4 battleship battle groups, 100 modernized attack submarines, and expanded amphibious assault and sealift capabilities. Recently introduced or improved weapons, such as the conventional TOMAHAWK land-attack cruise missile and the AV-8B (HARRIER), have contributed to conventional force modernization. Additionally, combat aircraft, fighting vehicles, and modernized munitions are being obtained to increase and strengthen the Marine Corps' rapid reaction and amphibious capabilities.

The Air Force continues to obtain more capable combat aircraft and modernized munitions while



**M-1 ABRAMS MAIN BATTLE TANK**



**LVTP-7 TRACKED LANDING VEHICLES**

working toward an interim goal of 40 tactical fighter wing (TFW) equivalents. However, projected funding shortfalls may necessitate the reduction of the current number of TFWs in order to ensure remaining forces are robust. Additionally, the modernization of the KC-135 fleet, deployment of KC-10 tanker/cargo aircraft, and acquisition of the C-17 will enhance our refueling and airlift forces.

These programs, together with the afloat pre-positioning force (APF), increased strategic airlift and sealift, and revitalization of special operations forces, will enhance the readiness posture and sustainability of US forces. Finally, added attention to cross-Service and allied requirements has enhanced the applicability of these improvements to both joint and combined operations.

The US must have a robust military construction (MILCON) program not only to keep pace with evolving technologies and changes in military hardware, but also to support the All-Volunteer Forces and

replace aging facilities. It must pursue a balanced and forward-looking MILCON program for combatant forces and military personnel and their dependents.

Good soldiers, sailors, airmen, and marines are essential to successful implementation of the US military strategy. Service manpower programs will continue to aim at recruiting and retaining quality men and women who value service to their nation and have the aptitude, skills, motivation, and physical and mental capabilities to operate and maintain modern weapon systems.

The program initiated to restore and maintain US military strength must be continued. Constant attention and sustained support are required to keep our forces strong. Although the trend in Congress is to reduce defense spending, short-term attempts to economize on military investments, whether in people, equipment, or facilities, can only lead to higher future costs and a less effective military posture with the attendant increased risk to national security.

## CHAPTER II. STRATEGIC REQUIREMENTS AND RESOURCE COMMITMENTS

### INTRODUCTION

US military strategy requires resources to maintain readiness, modernize for the future, support adequate force structure and sustainability levels, and provide a recognized capability to rapidly mobilize additional forces. The US Armed Forces should be supported by an efficient and effective national resource base. This chapter provides an overview of the US and Soviet resource bases that support military requirements.

The heavy Soviet investment in nuclear and conventional forces provides evidence of the high priority Soviet leaders place on military requirements. The United States devotes a smaller percentage of its national resources to its military posture, partly because of the defensive nature of the US military strategy, the structural differences in the two economies, and the different national security strategies. The Soviet system of centralized planning has an overall weaker economy and a relatively smaller economic base than that of the United States but has allowed the Soviets to place greater focus on areas of priority. Despite this smaller economic base, the Soviet Union directs a larger percentage of its peacetime resources to military requirements than does the United States. In addition to being able to spend a larger percentage of its resources, the Soviet Union can focus more resources on force structure and weapon systems hardware than the United States can. In particular, the cost of manpower is significantly less for the Soviet Union than for the United States (the US budget submission for fiscal year (FY) 1989 earmarked approximately 25 percent for military compensation).

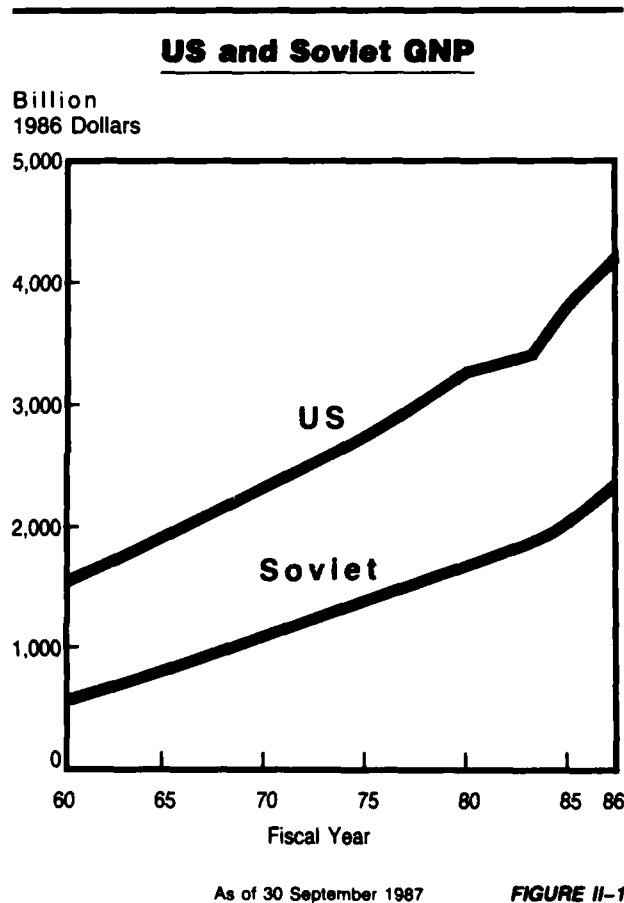
### RESOURCES IN SUPPORT OF NATIONAL OBJECTIVES

#### Overview

A nation's economy should support its national security objectives effectively. The industrial base should be capable of producing the required military equipment from available resources and be supported by adequate manpower. Further, the industrial base must be able to respond to surges or mobilize to meet the needs of the Armed Forces. The United States requires a strong technological base and industrial production infrastructure to ensure that its forces continue to be equipped with qualitatively superior weapons, produced with representative modern technology.

### Economic Support

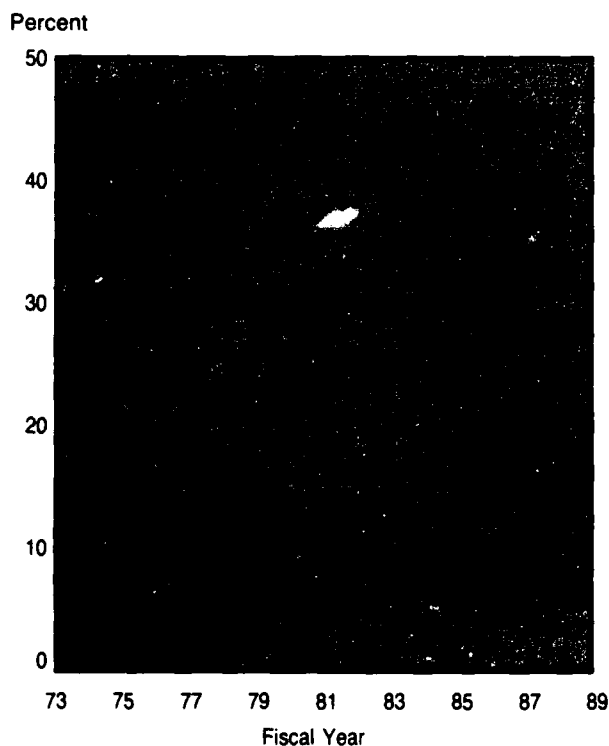
The economic strengths of the United States and the Soviet Union can be compared by examining their gross national products (GNPs). Figure II-1 shows that the US GNP is almost 90 percent higher than that of the Soviet Union. The gap continues to widen in favor of the United States, giving it a greater potential for supporting defense spending.



The Soviet Union has steadily increased its military effort. For the 1976-1985 period, the estimated cumulative dollar cost of Soviet investment for strategic forces is 2.5 times that of comparable US outlays, and the Soviet investment for general purpose forces is 30 percent higher. Consequently, the Soviet inventory of weapons is far larger than that of the United States. Also, the average age of deployed Soviet weapons continues to decrease with the introduction of new and qualitatively improved systems. Although the

decline in real US defense spending had until recently been reversed, its percentage of GNP remained fairly constant over the last few years, as shown in Figure II-2. Real defense spending declined in FY 1986, FY 1987, and FY 1988, and the Budget Authority must be increased in real growth to meet future needs. Strong and sustained support for defense activities will be necessary in light of the Soviets' inventory expansion and continuing high rate of investment.

### US Defense Expenditures as a Percentage of GNP and Federal Expenditures



As of 30 September 1987

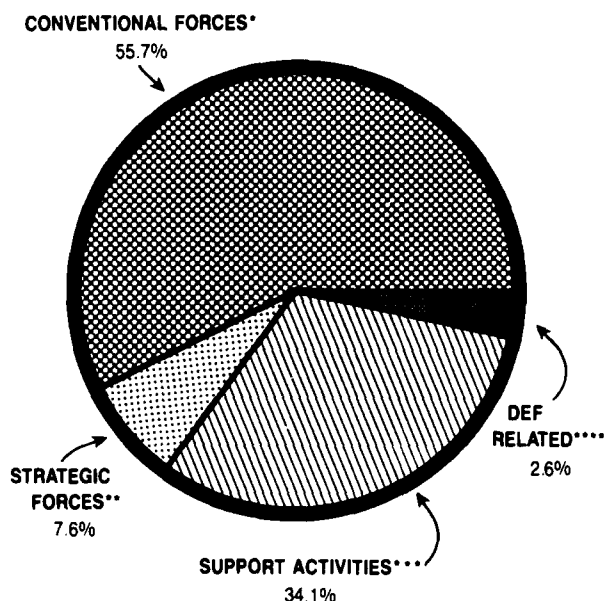
FIGURE II-2

### National Defense Budget

Defense budget funds are used to develop, equip, support, maintain, and train the forces that enable implementation of our military strategy. A breakdown of the US defense budget for FY 1988 by major program area is in Figure II-3.

Subsequent chapters will address improvements and developments of these forces. However, budget cuts have an immediate adverse impact on the readi-

### Defense Budget for FY 1988



\* Includes theater (nonstrategic) nuclear forces

\*\* Does not include RDT & E for SDI or nonstrategic nuclear forces

\*\*\* Includes RDT & E for SDI

\*\*\*\* Includes DOE funding

SOURCE: OMB, "THE US BUDGET IN BRIEF - FISCAL YEAR 1988"

As of 30 September 1987

FIGURE II-3

ness and sustainability of our forces and their ability to implement military strategy.

### Industrial Base

Military power can be measured, in part, by peacetime industrial might of a nation and how rapidly this resource can be converted to military production. The Soviet defense industry is now the world's largest. If the full industrial capabilities of both nations were mobilized for military production, the United States would not be able to initially match Soviet output. The US could eventually surpass Soviet capabilities in both size and output, given the time and resources to do so. In March 1987, the Joint Staff estimated that it would take three years under full industrial mobilization and over \$1 trillion above current five-year planning levels to produce most of the planning force,



less necessary ship construction. Therefore, both the timing and resources the US places on industrial mobilization are critical to the successful outcome of a major protracted conflict with the Soviet Union.

Soviet weapon plants and war-related production facilities are continually active. Before old weapon production lines are phased out, new ones are begun. This continually "warm" arms production base permits the Soviet Union to rapidly increase production to satisfy military requirements. The US emphasis on high technology manufacturing with complex production hierarchies — heavy reliance on offshore sources for both processes and componentry — has severely limited any significant expansion of output in less than 18 months for most major systems or munitions. Although this deficiency is widely recognized as a major source of concern for sustainability of warfighters, past programs for investment in industrial preparedness have not competed with those which emphasized readiness and modernization. This is due in part to the tendency over past years to prepare to respond to only unambiguous (short) warning and, therefore, to discount the industrial base as an element of sustainability and national power.

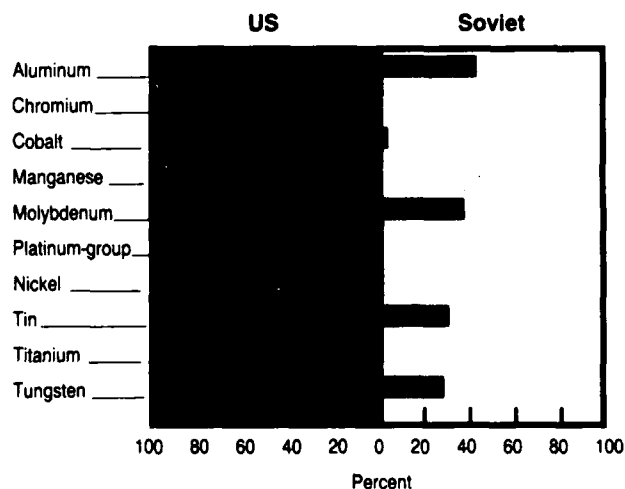
US defense planners are making progress on a variety of fronts to capitalize on the capacity of the US industrial base as an element of both military power and deterrence. The Joint Industrial Mobilization Planning Process will link operation plan requirements with logistic support capability, not only logistics in place, but industrial base capacity as well. A related system for gradually mobilizing the industrial base in response to ambiguous warning is currently being tested during JCS-sponsored exercises. This concept uses ambiguous warnings to begin to prepare the industrial base for mobilization as a given crisis situation deteriorates. It focuses planning and resources, if required, on production facilities critical to specific OPLAN requirements. These two efforts are expected to improve the joint planning process both by producing better sustainability estimates and better articulation of investments needed to improve the industrial base.

While planning improvements are being made, real solutions to eliminate anticipated shortfalls in our industrial base responsiveness still elude us. A continuing need exists for investments to ensure that the necessary improvements are made to the US industrial base. Also, lack of progress and emphasis on sustainability by US allies continues to be a concern.

## Natural Resources To Support Defense

The ability to mobilize and increase wartime production depends in part on the availability of critical raw materials. These materials must be indigenous to the country, stockpiled, or available over secure lines of communication (LOCs) in time of war. The Soviet Union, which has extensive and varied mineral resources and a policy of self-sufficiency, relies on imports for only a few strategic raw materials, as shown in Figure II-4. The United States, on the other hand, relies on foreign sources for most strategic minerals. The United States must expect problems in maintaining critical raw material stocks for military production in wartime and take necessary actions in peacetime to minimize that impact.

### US-Soviet Reliance on Selected Mineral Imports



As of 30 September 1987

FIGURE II-4

## Energy in Support of the Industrial Base

Energy resources and capabilities are vital to the support and maintenance of the industrial base. The Soviet Union is the only major industrial and military power that is energy self-sufficient. In the past few years, the USSR has surpassed the United States in the total production of primary energy while remaining second in total consumption. Production of natural gas and electricity and nuclear power plants are the two fastest growing sectors of energy. An energy-sufficient Soviet Union with an exportable surplus has far-reaching military and economic ramifications for the United States and its allies. In this

situation, the industrial allies must strike a reasonable balance between total self-reliance in the energy sector and an unbridled dependence upon oil from the Persian Gulf, cushion the shock of potential oil disruptions with an adequate strategic reserve of oil, and encourage substitutes for oil as global supplies diminish. Throughout, it is essential to maintain access to the Persian Gulf and deal effectively with threats to peaceful commerce in that part of the world.

### **Manpower in Support of Defense**

Both the United States and Soviet Union depend on large labor pools to staff their armed forces and provide skilled labor to support their bases. Although Soviet military forces are 2-1/2 times larger than those of the United States, the Soviet primary mobilization pool of 18 to 50 year-old males is only 12 percent larger. Approximately 2 million males reach age 18 annually in each country.

Conscription is the principal source of Soviet military manpower. The period of service is normally 2 years, or 3 in the case of the Navy. Soviet conscription significantly reduces personnel costs and guarantees a sizable trained manpower source for mobilization. Of the estimated 50 million personnel within the Soviet reserve forces, 9 million have served on active duty during the last 5 years. On the other hand, high turnover rates adversely affect readiness and unit cohesion.

Soviet manpower advantages lie in the numbers of personnel already under arms or involved in defense production and the trained military mobilization pool. The size of the US labor pool should be sufficient to meet the demands of both the armed forces and military production because the United States has a less labor-intensive production base. However, the ability of the United States to meet both demands will depend, in part, on the availability of adequate response time.

## **OVERCOMING A QUANTITATIVE DISADVANTAGE**

### **Technological Leadership**

The Soviet Union has forces with a quantitative advantage over those of the United States. One US approach to countering numerically superior enemy forces is to field qualitatively superior forces, concentrating resources to produce technology-intensive combat and combat support forces capable of achieving decisive results. This approach requires

the United States and its allies to maintain the lead in critical military technologies and to deploy weapon systems reflecting their capabilities. Technological progress increases the deterrent value of US forces and provides a hedge against a Soviet technological breakout. US advanced technology also imposes strategic costs on the Soviets by causing them to divert resources from more easily produced systems in order to counter new, more capable US systems. Strong US and allied technological bases must be maintained if their qualitative lead in fielded systems is to be retained.

US and allied technological leadership and cooperation are even more important now because the Soviets have fielded new equipment that is technologically comparable to that produced in the West. Since there are limits to the forces the United States and its allies can build and operate, US and allied leaders must search for ways to increase the effectiveness of the forces they field through the exploitation of emerging technologies, sound operational concepts, and effective training. Emphasis must be given to technologies that provide the greatest advantage and increase in capability. However, high technology cannot provide the solution to all military requirements. Technically superior equipment can only complement, not replace, superior planning, sound doctrine, proper training, and sustained support. Every proposed application of new technology must strike a balance among technical sophistication, essential readiness, cost, utility, and endurance if it is to be effective in our force structure.

The maintenance of a US technological advantage also depends heavily upon efforts to prevent the transfer of such technology from the United States and other advanced nations to the Soviets and other potential adversaries. The acquisition of critical technology by potential adversaries reduces their cost of obtaining new capabilities, allows them to deploy new systems sooner, and provides data that can be used to counter the effectiveness of US weapon systems and equipment.

### **Allied Forces**

Strong alliances are an important part of the US military strategy. US and allied defense efforts must be integrated effectively to ensure that their collective capabilities are realized. The need persists for greater interoperability between US and allied equipment, ammunition, and techniques, as well as command, control, communications, and intelligence (C<sup>3</sup>I) sys-

tems. The NATO Air Command and Control System Master Plan is the vehicle the US and its European Allies propose as the "umbrella" under which greater C<sup>3</sup>I and weapons systems interoperability may be achieved. The Master Plan initiatives are taking place now and will impact through the year 2000 and beyond. Vital US C<sup>3</sup>I areas of interest are provided to NATO through a DOD shadow program titled the European Theater Air Command and Control System Study. The United States and its NATO allies are continuing to improve capabilities for mutual support and coordination through mechanisms such as armaments cooperation and the NATO Wartime Reallocation Agreement, which has been negotiated between the United States and Supreme Allied Commander Atlantic (SACLANT). The strong air defense alliance maintained with Canada continues to improve. Interoperability with friendly Asian countries is improving through equipment and procedure modifications and

frequent combined military exercises. In Japan, single service and joint/combined doctrinal, material, conceptual, and logistic interoperability issues are now reviewed semiannually by bilateral interoperability steering committees.

Strong alliances, combined with a continuing number of important initiatives that are beginning to result in industrial expansion and modernization, enable the United States to counteract the Soviet threat. Positive results from policies and programs established in recent years are being seen. One example is sharing of technology with NATO countries and Japan to reduce redundancy of expenditure in research and development (R&D) efforts. The technology security arrangements associated with these transfers of sensitive and classified technologies are pillars of allied security policy and provide the basis for further allied armament cooperations.

## CHAPTER III. THE MILITARY ENVIRONMENT

### INTRODUCTION

World events have demonstrated that potential adversaries of the United States are willing to use military force in the pursuit of their objectives. Turmoil in underdeveloped areas of the world threatens the flow of resources among nations and provides the Soviet Union opportunities to expand its influence. Instability is most prevalent in the Persian Gulf, Central American-Caribbean region, Africa, Southeast Asia, and the area from Libya to Afghanistan. Nations within these regions are continually confronted by problems that defy easy solution and often lead to insurgency and intraregional strife.

Intraregional conflict poses the risk of involving both adjoining nations and major powers outside the area. The United States must stand ready with other nations to deter regional conflicts or limit them should deterrence fail.

This chapter addresses the global military environment from regional, maritime, and security assistance perspectives.

### GLOBAL OVERVIEW

#### Soviet Posture

Soviet and Non-Soviet Warsaw Pact (NSWP) forces deployed in Eastern Europe and Soviet forces deployed in the Asian and Pacific theaters constitute the major military threat to the United States and its allies. Major Soviet air, land, and naval forces face Western Europe, Southwest Asia, and the Northwest Pacific (Figure III-1). The Soviets maintain a military presence in Africa, Southeast Asia, and Cuba, in addition to a significant fighting force in Afghanistan. They actively seek ways to diminish US influence and credibility worldwide through political initiatives, commercial and economic inroads, and disinformation campaigns. Further, the Soviets provide security assistance on an extensive scale and use surrogate forces to project their military power.

#### US Posture

In the years since World War II, United States strategy has embraced a number of fundamental goals: bolster democracy and freedom in the world at large, encourage commercial interdependence among developed and developing nations, shield this efficient but fragile system of interdependence against major disruptions, prevent often trembling military balances

from turning to our disadvantage, and endeavor to keep half wars from turning into complete ones in the Third World and elsewhere. These goals require an extraordinary amount of American leadership and practical policies to keep relations with the Free World on an even keel and on a progressive course agreeable to all concerned.

On the military side of this strategy, effectiveness depends on a system of forward deployed forces and on close cooperation with regional allies. In addition to their own military forces, these allies may also provide basing and staging facilities, overflight rights, ashore pre-positioning sites, and host-nation support to assist the United States in reducing the costs associated with maintaining forces overseas. Figure III-2 shows the current deployment of major US air, land, and naval forces. The majority of the remaining US active component forces and virtually all RC forces are located in CONUS. RC forces provide the flexibility to shift forces as required by various contingencies or world developments.

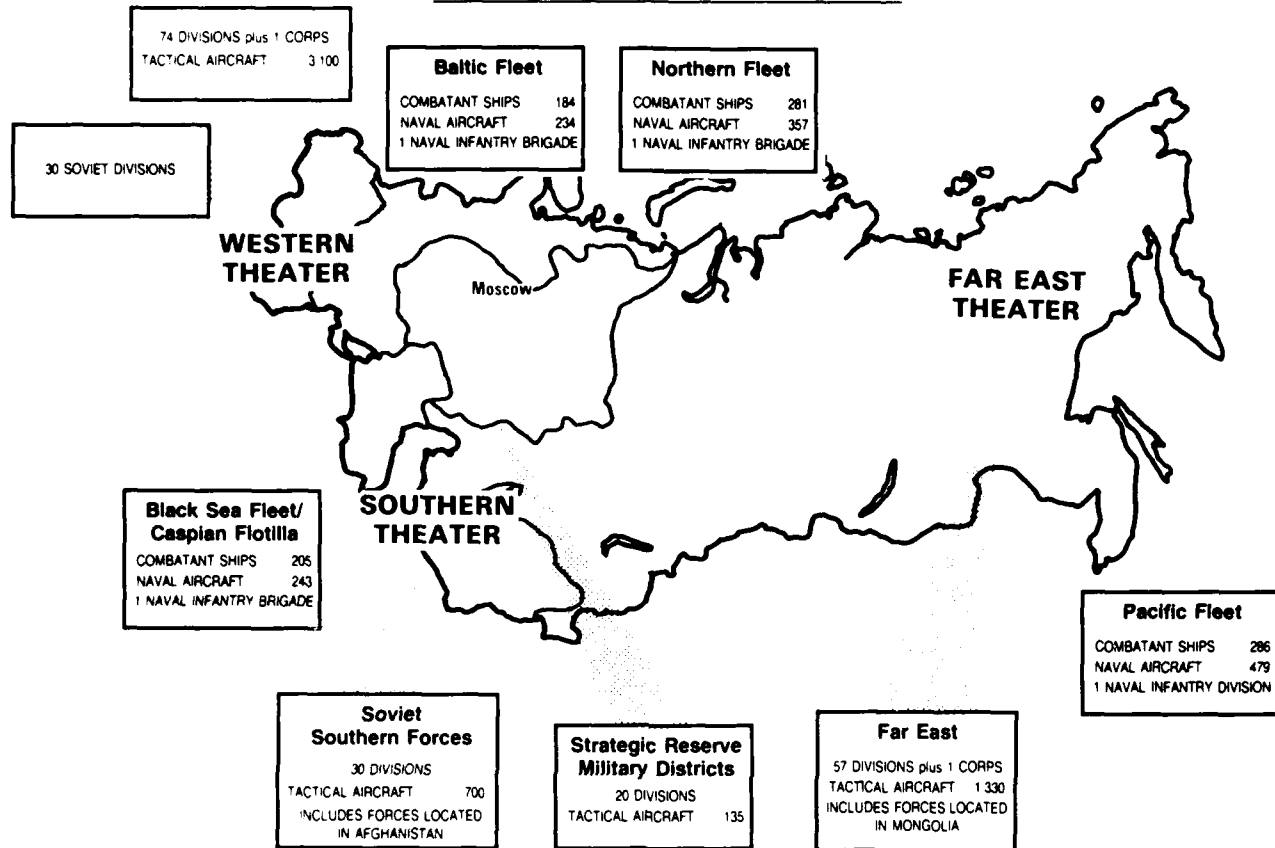
### AIR AND LAND ENVIRONMENT REGIONAL FORCES

#### NATO and Western Europe

Warsaw Pact conventional forces are being modernized at a pace that threatens NATO's longstanding advantages in quality. The United States and its NATO allies have significantly improved their conventional capabilities, but still require strong and sustained efforts to meet Alliance force goals.

The Warsaw Pact's military strength far exceeds that required to defend its territory. Its conventional forces are organized, equipped, and trained to conduct offensive operations, and their doctrine and exercises continue to emphasize the elements of surprise and large-scale penetration of NATO territory. The major forces facing NATO are depicted in Figure III-3 with arrows showing probable routes of attack. Figure III-4 illustrates the Warsaw Pact advantage. In the past year, the capability of US combat forces in Europe to support military operations has continued to improve. Serious deficiencies remain in NATO's conventional forces. These deficiencies are being addressed through the Conventional Defense Improvements (CDI) initiative. The United States has applied this initiative to US readiness, sustainability, modernization, and force structure plans for the years

## Soviet Conventional Forces\*



\* (U) Combatant ships include submarines (SSGN, SSG, SSN and SS), carriers, principal surface combatants, patrol combatants, mine warfare ships, and amphibious ships. Submarines and principal surface combatants in reserve are excluded. Naval aircraft include fixed- and rotary-wing combat/combat support aircraft.

As of 30 September 1987

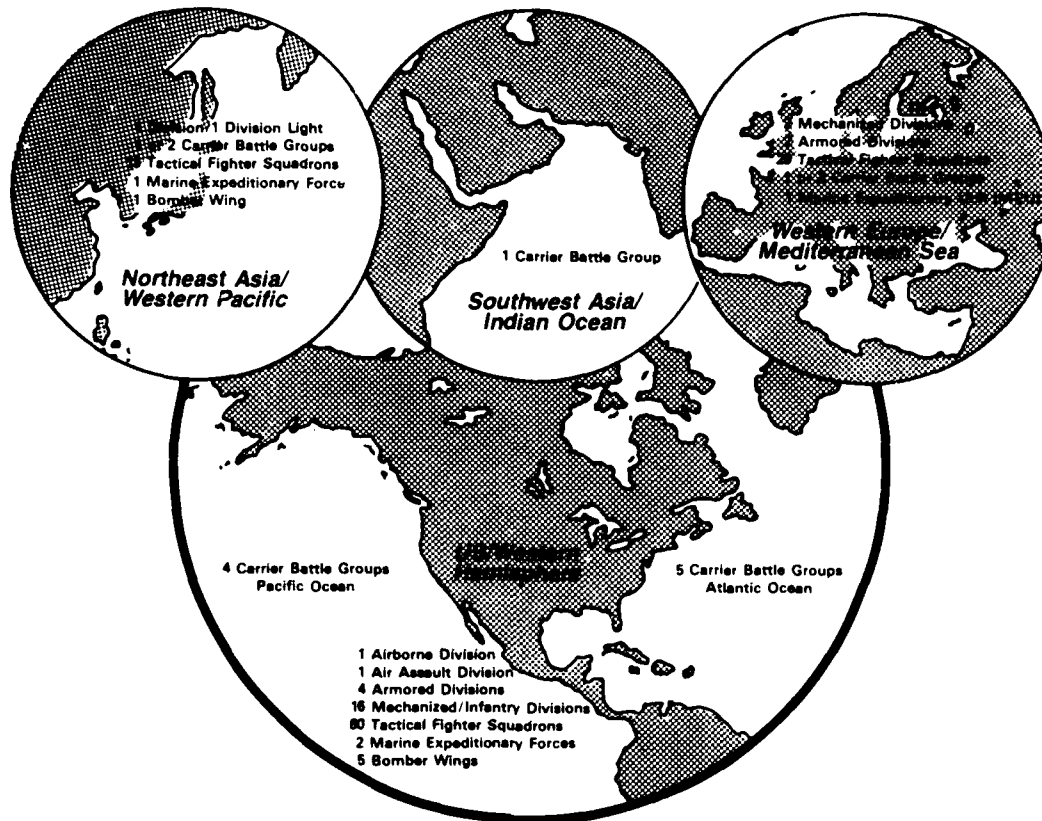
FIGURE III-1

ahead. However, corresponding Soviet and NSWP improvements require combined NATO improvements to maintain a viable deterrence. One critical challenge confronting US European Command (USEUCOM) and NATO is the congressionally mandated European troop strength (ETS) ceiling and its adverse impact on force structure, modernization, readiness, and sustainability. Abolishment of the ETS ceiling as an arbitrary manpower ceiling and establishment of a force structure based upon geostrategic principles and the Warsaw Pact threat would enhance NATO's conventional deterrence capabilities. In its follow-on forces attack (FOFA) doctrine, NATO has laid the groundwork to take better advantage of emerging technologies. This doctrine will employ state-of-the-art surveillance, target acquisition, information handling, and attack systems to exploit a weakness in the Warsaw Pact offensive doctrine which is their

high dependence upon the echeloning of attacking ground forces.

The ability to reinforce forward-deployed US forces rapidly is also a key factor in supporting US commitments to NATO. In a related area, the NATO allies have shown improvement in meeting war reserve materials goals. The main focus of their effort has been on specific critical munitions, which are identified item-by-item for each nation in the form of CDI-highlighted force goals. Overall, taking into account both CDI and non-CDI items, the non-US allies, particularly the Central Region countries, continue to project progress in increasing their holdings of major ground, air, and maritime munitions. The relatively positive picture portrayed is not intended to suggest that NATO's ammunition situation is fully satisfactory. Rather, the important point is that although major

## US Conventional Forces



As of 30 September 1987

FIGURE III-2

shortfalls do currently exist in several key munition categories, the Alliance has in recent years undertaken vigorous efforts to improve and these efforts are beginning to pay off.

Comparisons of NATO and Warsaw Pact conventional forces in Europe are displayed in Figures III-5 through III-8.

Trends in ground forces continue to favor the Warsaw Pact. The Warsaw Pact advantage in tanks continues at more than two-to-one, with an even greater advantage in artillery, mortars, and rocket systems. Growing numbers of increasingly accurate, conventionally armed Warsaw Pact tactical ballistic missiles provide a significant force multiplier to the air operation in the deep attack of NATO's vital assets. The Warsaw Pact maintains large numbers of air defense systems in Europe, and the ratio of these systems to NATO tactical air units is increasing. The Warsaw Pact retains a significant advantage in chemical offensive capability and in its ability to

operate on the integrated battlefield. Now that the Intermediate nuclear forces (INF) treaty has been signed, these conventional forces will assume even greater significance.

NATO outnumbers the Warsaw Pact in tactical air-to-ground systems but still faces a significant numerical disadvantage in air-to-air fighters. Although not as great as it once was, the qualitative advantage of NATO's tactical air weapon systems helps offset imbalances in total numbers of aircraft. The lack of a NATO identification system (NIS), which includes an improved identification, friend or foe (IFF) capability, hampers the employment of NATO's air defense aircraft. A standardization agreement (STANAG) concerning the operating frequency for NIS has been tentatively approved by five NATO nations. However, individual technical concerns and reservations have prevented final agreement. NATO representatives are continuing their efforts to resolve this issue. Even after an agreement is reached, airspace control will remain a difficult problem until the equipment is fielded.

The Warsaw Pact has a greater number of hardened shelters for its aircraft than does NATO. However, actions continue within the Alliance to expedite the NATO aircraft shelter program.

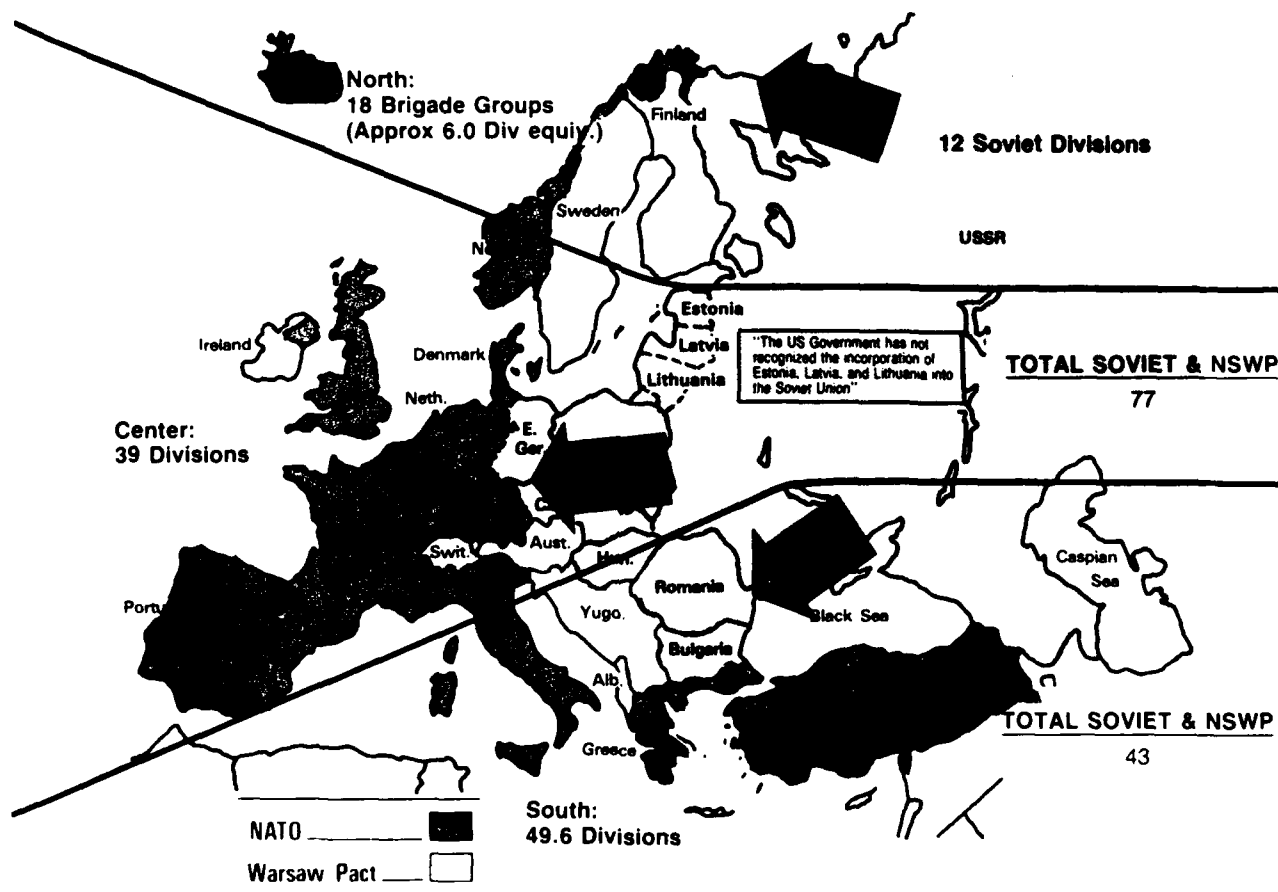
Modernization programs have allowed NATO naval forces to maintain an overall advantage over the Warsaw Pact; nevertheless, Soviet naval forces remain capable of threatening US and allied forces operating in the maritime approaches to Europe and of posing a threat to reinforcement and resupply shipping in the Atlantic Ocean. An attendant concern is the rapidly improving Soviet space-based ocean surveillance and targeting capability.

The successful defense of the NATO Alliance remains highly sensitive to the time available for mobilization, early decisions by NATO political authorities, force allocations, en route survivability, and the adequacy of munitions and other consumables. Critical to the ability of the United States to reinforce the European theater will be the availability and sustainability of bases in Iceland and the Azores along with NATO's ability to protect and defend Atlantic, Caribbean, and Mediterranean sea lines of communication (SLOCs).

## Middle East and Southwest Asia

The security of the Middle East and Southwest

### In-Place and Rapidly Deployable NATO and Warsaw Pact Forces\*



\* Includes rapidly deployable and POMCUS forces. Includes those US Forces whose equipment is stored in Europe and high-readiness Soviet Forces located in the Baltic, Belorussian, Carpathian, Odessa, Kiev, and North Caucasus Military Districts. Also includes separate Soviet airborne divisions. All Soviet forces in the Leningrad and Transcaucasus Military Districts and NSWP mobilization bases are considered in place. Excludes artillery division.

\*\* France and Spain are not part of the NATO integrated military command structure and are not included.

Boundary representation is not necessarily authoritative

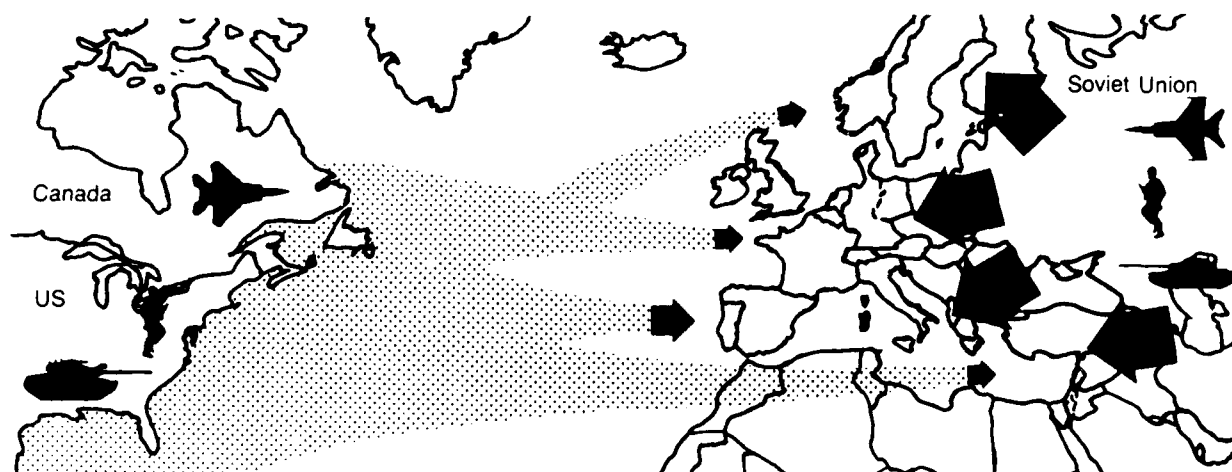
As of 30 September 1987

FIGURE III-3

## NATO-Warsaw Pact Reinforcement

6,000 km From North America

650 km From Western Borders of Soviet Union



Boundary representation is not necessarily authoritative.

As of 30 September 1987

FIGURE III-4

Asia is critical to the economic health of the free world and, consequently, to the security of the United States. Regional stability, Free World access to oil resources, and the limitation of Soviet influence remain important US objectives. Figure III-9 identifies current areas of concern.

To accomplish its objectives in the region, the United States is involved in diplomatic initiatives, selected security assistance, protection of US-flagged shipping, and multinational peacekeeping efforts to provide a strong deterrent stance (Figure III-10). In recognition of major external threats, the United States continues to improve its capability to deploy forces to the region should the need arise.

Threats to the political stability and the free flow of oil to the West from this region are numerous and complex. Local disputes continue to draw regional factions into armed conflict, and terrorist actions remain a significant challenge.

The region is marked by the ongoing Iran-Iraq war, the Chadian-Libyan conflict, continuing Arab-Israeli conflict, and internal upheavals in Sudan, the People's Democratic Republic of Yemen, Lebanon, Ethiopia, and Soviet-occupied Afghanistan. As the Arab-Israeli conflict continues, the US has attempted to establish a framework for peace, but rejectionist Arab states have continued to actively sponsor ter-

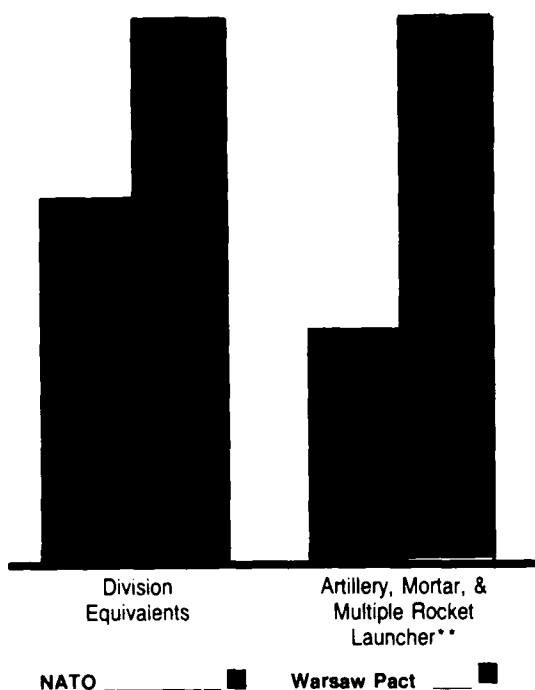
rorism and the isolation/elimination of Israel. Much work remains to establish a climate in the Middle East where the legitimate rights of all parties, including the Palestinians, can be equitably addressed. The increased threat to economic interests posed by the shift of emphasis in the Iraq-Iran war to the maritime theater has caused a corresponding military buildup by the Western Powers. The US response has resulted in the establishment of a Joint Task Force to ensure unity of effort for all of our military forces in the region. The Joint Task Force encompasses assets from all four Services and provides the on-scene commander with a wide range of capabilities to defend US flag shipping and with response options to meet emergent threats to peaceful commerce in the Persian Gulf. A number of friends and allies, both local and external to the Gulf, are now contributing independently but substantially to this effort.

In the meantime, Soviet forces facing Iran and Eastern Turkey are organized as a major offensive force of some 30 divisions, 5,400 tanks, and 725 tactical jet aircraft. These forces are controlled by an operational high command-theater of military operations (TVD)-that includes over 115,000 Soviet forces occupying Afghanistan and facing Pakistan. In Afghanistan, Soviet occupation and oppression continue with large-scale combat operations conducted against local civilians as well as the resistance forces. Forced population relocations and violations



## NATO-Warsaw Pact Ground Force Balance\*

(Mobilized)



\* Fully mobilized—includes North American reinforcements and all Warsaw Pact forces located west of Ural mountains. Excludes artillery divisions.

\*\* Divisional and non-divisional artillery, mortar, and rocket systems include 100mm and above only.

As of 30 September 1987

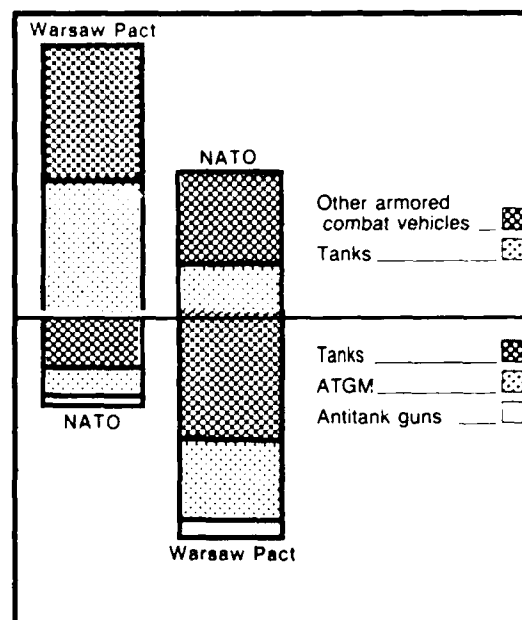
FIGURE III-5

of the sovereign borders of neighboring states also contribute to severe regional tensions that cannot be resolved until Soviet forces are withdrawn. The Soviets have sought to extend their influence in the region through major military assistance programs, and the regional countries now receive approximately half of all Soviet arms delivered to the Third World. These military assistance programs are complemented by diplomatic efforts. The Soviet's have a dominant role in Ethiopia and the People's Democratic Republic of Yemen, including access rights that provide facilities and anchorages for a continued Soviet naval presence in the Red and Arabian Seas.

The United States participates in a number of programs to promote peace and stability in the Mid-

## NATO-Warsaw Pact Armor and Antiarmor Systems\*

(Mobilized)



\* Fully mobilized—includes North American reinforcements and all Warsaw Pact forces located west of the Ural mountains. Excludes artillery divisions.

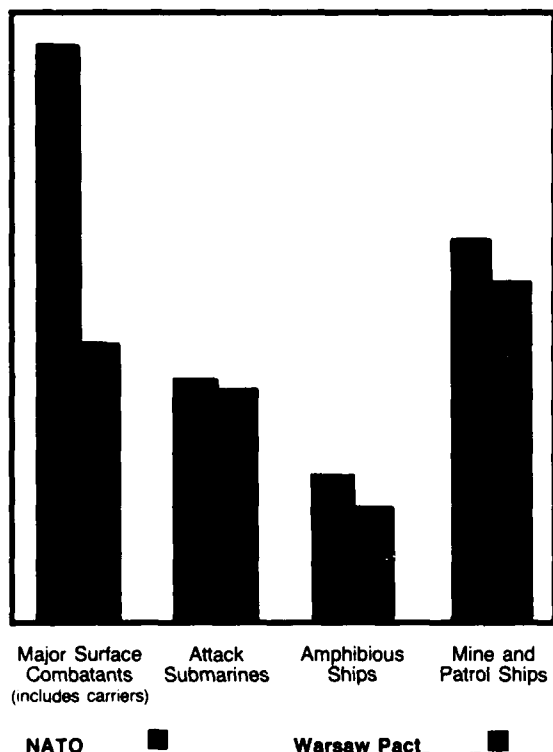
As of 30 September 1987

FIGURE III-6

dle East and Southwest Asia. Balanced, forward-deployed forces protect US interests, and the United States provides security assistance to friendly nations in order to build up their capabilities to protect themselves and to help deter intraregional conflict. The United States continues to provide US Army personnel and units to the Multinational Force and Observers (MFO) in accordance with the Protocol to the Treaty of Peace between Egypt and Israel. Additionally, US ground and air forces periodically conduct exercises with nations of the region to enhance cooperation and interoperability. US allies, such as France and the United Kingdom, also provide security assistance and a limited military presence. The Commander in Chief, US Central Command (USCINCCENT) coordinates all US military activities in the Southwest Asia region. In addition to a forward headquarters element aboard ship in the Persian Gulf, USCINCCENT has established a Joint Task Force headquarters aboard ship in the North

## NATO-Warsaw Pact Naval Force Balance\*

(Mobilized)



\* Warsaw Pact figures include units assigned to the Soviet Northern, Baltic, and Black Sea Fleets and Caspian Flotilla, and to the navies of Bulgaria, the German Democratic Republic, Poland, and Romania. Reserve units are excluded. Attack Submarines include SSGN, SSG, SSN, and SS. Soviet Pacific Ocean Fleet ships are excluded.

As of 30 September 1987

FIGURE III-7

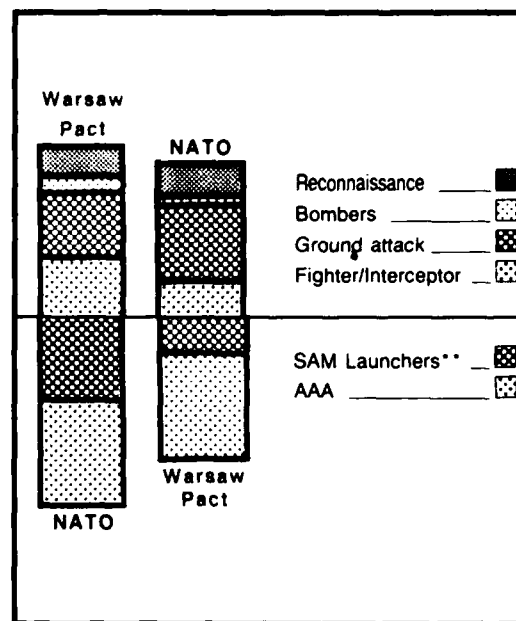
Arabian Sea to coordinate all US military efforts in the region. Figure III-11 shows selected forces present in the Middle East and Southwest Asia region. In the Indian Ocean, the Commander-in-Chief, US Pacific Command (USCINCPAC) maintains his Naval Support Facility and pre-positioned force at Diego Garcia near the strategic SLOCs to and from the Persian Gulf.

### Pacific

Shortly after coming to power, Gorbachev announced that the Soviet Union would become a true Pacific power. Since his ascendance, there have been numerous indicators of Soviet intentions to contest

## NATO-Warsaw Pact \* Air and Air Defense Systems

(Mobilized)



\* Does not include naval aviation

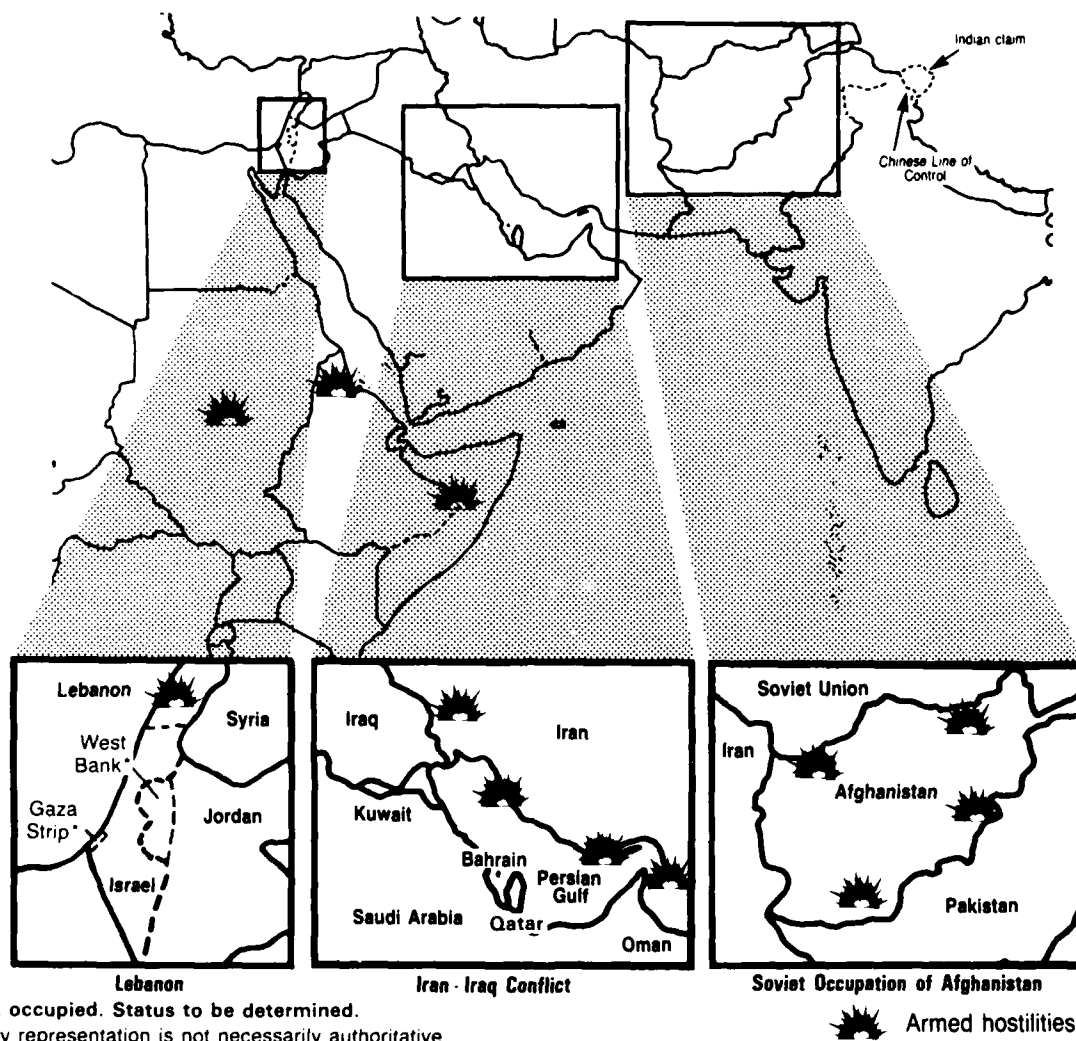
\*\* Does not include hand-held systems

As of 30 September 1987

FIGURE III-8

US presence and interest in the Pacific. Examples are increases in both quantity and quality of Soviet military forces; deployment of Soviet military forces to the far reaches of the Pacific; new political initiatives throughout the region; invigorated diplomatic offensives in major Pacific capitals; expanded security assistance programs; and attempts to penetrate markets. To meet this increasing threat, the United States has focused its Pacific warfighting strategy on posturing early and sending the right signals to the Soviets and our allies. In a potential crisis situation, deterrence is best served by open and early positioning of forces for strikes against Soviet forces and warfighting facilities, and by showing our resolve to maintain peace and support for nations in the region. Should the Soviets initiate hostilities in this theater or initiate events elsewhere, US military forces are prepared to engage them as far forward as possible to neutralize their warfighting capability. Capabilities to deal effectively with the strategic situation as it evolves in the Pacific depend largely on forces able to place the Soviet military posture at risk, plans and

## Areas of Concern Middle East-Southwest Asia

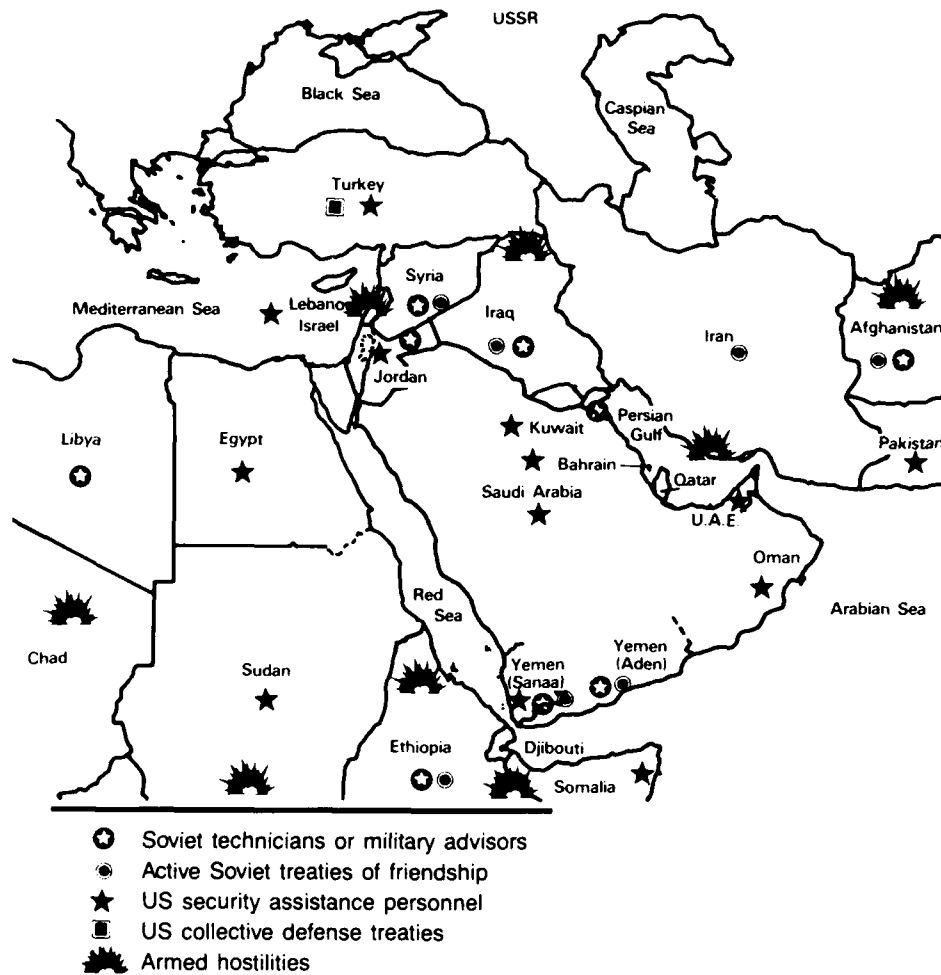


programs to enhance Pacific-wide defenses, strong resolve among US allies, and timely decisions by national command authorities based on the situation at hand.

Although the balance of power places the Soviet Union on the strategic defensive in Asia, increased Soviet abilities to project military forces into the Pacific region pose a significant threat to US and allied (primarily Japanese) interests. Figure III-12 shows the disposition of selected military forces in the region. Strong Soviet land forces remain on the Sino-Soviet border, and the Soviet's largest naval

fleet is employed in the Pacific. The continued improvement of Soviet Pacific forces increases the threat to Japan and other Northeast Asia nations. The development of the largest forward-deployed Soviet naval and air base outside the Warsaw Pact at Cam Ranh Bay, Vietnam, has improved the Soviet ability to reconnoiter and interdict Pacific and Indian Ocean SLOCs and respond to regional crises in the Indian Ocean and South Pacific. The Soviet-supported North Korean armed forces continue to prepare for a military reunification of the Korean peninsula should circumstances prove favorable. Despite negative economic impacts, North Korea continues to modernize

## Middle East and Southwest Asia



Boundary representation is not necessarily authoritative.

As of 30 September 1987

**FIGURE III-10**

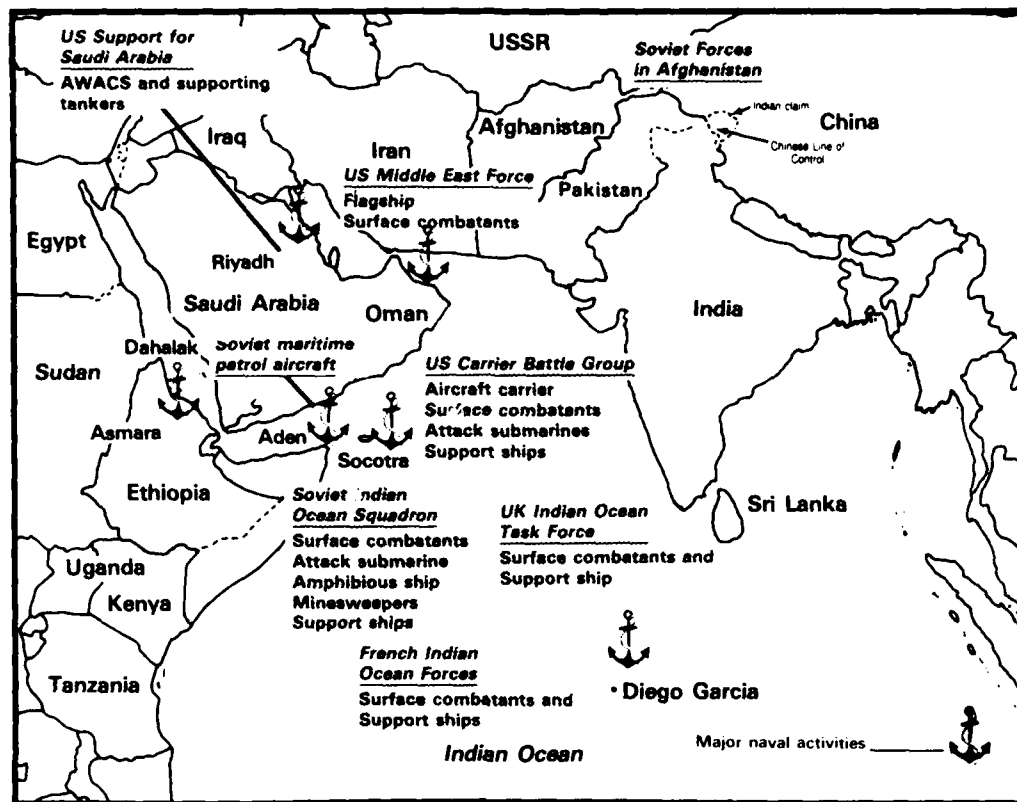
its armed forces. In particular, FLOGGER aircraft and SA-3 and SA-5 missiles and ZSU-23-4s will improve significantly the North Korean air defense capabilities. In Southeast Asia, Vietnam's armed forces of over 1 million men are larger than the total armed forces of the ASEAN and remain the region's primary destabilizing influence. Soviet economic and military support have allowed Vietnam to improve its military capabilities. Nearly 150,000 Vietnamese troops currently occupy Cambodia, threatening the security of Thailand's border areas.

Common strategic goals among the United States and its Asian-Pacific allies and friends are peace and

stability in the region. The growing threat requires close regional defense cooperation and collective security arrangements with our allies. The United States has security agreements with Japan, the Republic of Korea (ROK), Thailand, the Philippines, and Australia.

The ANZUS treaty, which is now supported by a strong, bilateral security cooperation between the United States and Australia, provides stability in the Western and Southern Pacific. In June 1987, New Zealand enacted legislation of a previous policy that prevented normal alliance cooperation. The United States has confirmed the suspension of its ANZUS security obligations to New Zealand pending

## Allied-Soviet Presence in Southwest Asia



Boundary representation is not necessarily authoritative.

As of 30 September 1987

FIGURE III-11

adequate corrective measures by New Zealand. The United States and Australia continue to maintain a framework that would permit resumption of trilateral cooperation, should future circumstances warrant.

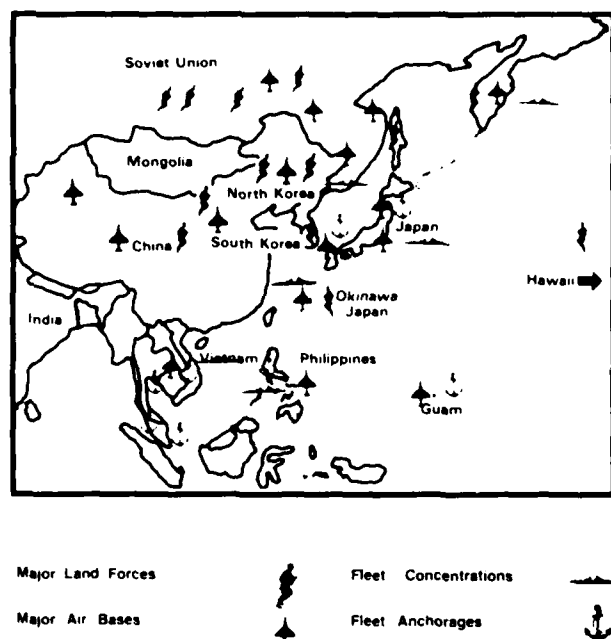
The well-trained ROK forces are becoming increasingly self-sufficient in their capability to defend against North Korea but are still dependent upon US support, both operationally and through pre-positioned war reserve material, to deter or counter an attack. The United States continues to maintain an infantry division and combat air forces within the country, and US naval units in the Western Pacific can respond quickly if needed. Figure III-13 compares the major forces on the Korean peninsula. The ROK provides extensive support to forward-based US units, and the forces of the two countries are integrated into a single command structure, the Combined Forces Command. Combined US-ROK military training is conducted through day-to-day activities and annual exercises. Major exercises, such as TEAM SPIRIT,

demonstrate allied cooperation and US reinforcement potential.

Japan is a linchpin for Northeast Asia. The Japanese Self-Defense Force has improved and is well-equipped and well-trained. Although Japan continues to require strong security linkages to the United States, its defense budgets have increased at a steady rate of 5 percent per year in real terms in recognition of the threat and Japan's acknowledgement of its responsibility to conduct defense of its SLOCs out to 1,000 nautical miles (nm). US bases in Japan play a vital role in Japan's defense and provide operational and logistic bases for US operations throughout Northeast Asia. Unlike command relations with the ROK, the bilateral defense relationship with Japan is based on a parallel command structure.

Building a stable relationship and cooperating in China's modernization are important elements of US strategy for the region. Not only does China coun-

## Major Power Balance in East Asia and the Pacific



As of 30 September 1987

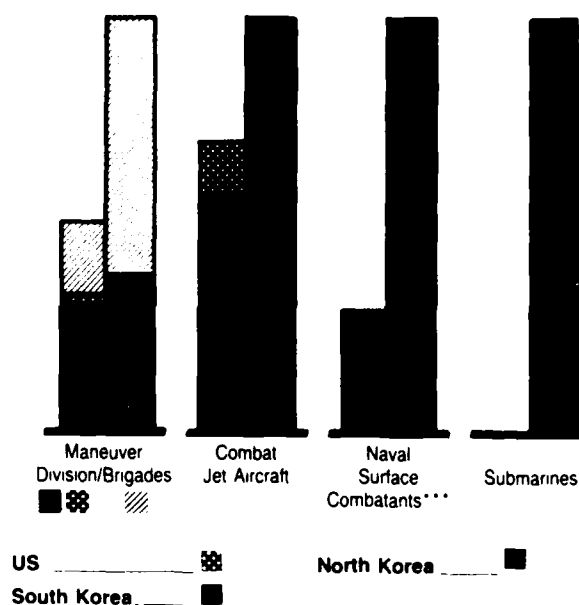
FIGURE III-12

terbalance Soviet influence in East Asia, but a prospering, secure, and more Western-oriented People's Republic of China (PRC) can be a major contributor to regional security. The PRC is gradually improving its critical defensive security capabilities while pursuing national modernization. China is pursuing an independent foreign policy, but even limited US-PRC military cooperation can enhance China's security and promote a stable regional environment. Continuing the US role in China's modernization and supporting China's gradual incorporation into regional and world interaction strengthens the US credibility and presence and encourages China to support international security goals.

The United States maintains a close and longstanding bilateral defense relationship with the Philippines and has strategically important air and naval bases there. The Philippine Government faces demanding political, military, and economic challenges, along with a persistent and uncompromising threat from local insurgents. The continued and growing presence of politically violent and well-armed extremists in the

## Comparison of US-South Korean Forces and North Korean Forces

(Mobilized)



As of 30 September 1987

FIGURE III-13

Philippines poses a serious and direct threat to the stability and progress of that country and, in turn, to vital US security interests. Increased funding in the form of a comprehensive humanitarian, economic, and military aid package is required to insure that the Aquino government and democracy will survive.

## Latin America

The security of the United States is uniquely bound to security of the Western Hemisphere. The proximity of Central America and the Caribbean to our southern frontiers, the importance of the Panama Canal in domestic commerce (especially oil flow), and the emergence of Soviet surrogates in this region (Cuba and Nicaragua) reinforce these concerns.

Latin America's strategic importance derives additionally from several factors. The US needs Latin American military and scientific facilities and potential collective security support through application of the Rio Treaty and the Organization of American States (OAS). Latin America provides access to strategic minerals, materials, and over 55 percent of US crude

## Soviet-Cuban Presence in Latin America



Boundary representation is not necessarily authoritative.

As of 30 September 1987

FIGURE III-14

oil imports. Its ports, airfields, and repair and logistic facilities would be important for protecting the SLOCs and as forward staging areas support bases. Cuba and Nicaragua support insurgencies and regional destabilization which threaten peace and stability in the hemisphere. There are 27 active insurgent groups in nine Latin American countries. The expanding scope of global narcotics trafficking (particularly in Latin America) threatens our national security, and combined with insurgency and terrorism, undermines the stability of domestic states of the Western Hemisphere and distorts public perceptions of the narcotics issue. There are indications of a direct connection between the illegal drug trade and insurgent groups in the region. The US military should continue to actively support efforts to counter this threat,

consistent with maintaining force readiness.

The Soviet Union is attempting to foment unrest in the region. Working through Cuba and Nicaragua, the Soviet Union hopes to force the United States to divert resources to an area that, in the past, has not been a serious security challenge. The Soviet Union provides Cuba extensive financial support and has a combat brigade, a signals intelligence (SIGINT) facility, advisors, and technicians there. The Soviets also provide military aid to selected countries in the region, either directly or through Cuba, North Korea, or East European nations.

Cuba has the largest military in the region with 1,300,000 active and reserve personnel. Its air and

naval strength is growing steadily. Bolstered by Soviet aid (Figure III-14), Cuba supports a number of insurgent movements by providing training, advisors, technicians, and substantial amounts of military equipment not only in Latin America, but throughout the Third World. Cuba's military strength and hostile posture provide a direct threat to US SLOCs in a global conflict.

Although Cuba is an important base for Soviet involvement in the Western Hemisphere, Nicaragua also provides unique opportunities to establish a consolidated Soviet client state with influence in Central and South America that could threaten recent democratic trends, erode US influence in the region, and divert US resources from areas of greater strategic value to the Soviets. Nicaragua, following the pattern set 25 years ago in Cuba, is a regional sanctuary for insurgents and prime source for spreading insurgency throughout Central and South America. With Soviet and Cuban assistance, the Nicaraguan armed forces have become the largest, most powerful armed forces in the history of Central America. This inordinate growth in conventional capability has upset the balance of power, decreased regional stability, and now provides a secure mainland base for supporting subversive activities throughout the region (Figure III-15). The further consolidation of Sandinista power could conceivably result in additional Soviet facilities in proximity to the United States. The continued pres-

ence of Soviet military and technical advisors in Peru also poses a threat to US security interests; and the occasional presence of a Soviet naval deployment to the Caribbean, along with continued deployments of Soviet long-range reconnaissance and antisubmarine warfare aircraft to Cuba, remain a concern.

The United States and the majority of its Latin American allies have a common interest in promoting regional peace and stability. The success of this interest depends on the ability to consistently apply sufficient forces and resources, prevail in an environment of long-term low-intensity conflict, and present a clearly understood perception that the United States and its allies are capable and have the will to respond. To improve regional stability, the United States must help develop responsive pluralistic societies that are less vulnerable to insurgencies. The United States also must encourage and assist Latin American military institutions in adopting professional, apolitical roles that support democratic development and maintain respect for human rights. Military-to-military relations must be promoted through a system of interactions with the Latin American military to improve coordination, the exchange of views, understanding, and cooperation. Sharing intelligence and training in areas such as civil defense, civic action, internal security, psychological operations, and military engineering and medicine are counters to low-intensity threats. Military assistance is also helping countries

### **Conventional Forces in Central America**

	<b>NICARAGUA</b>		<b>Costa Rica</b>	<b>Honduras</b>	<b>Guatemala</b>	<b>Belize</b>	<b>El Salvador</b>	<b>Panama</b>
	<b>Pre-Sandinista</b>	<b>Present</b>						
Personnel (Thousands) . . .	12*	120*	8	22**	55*	1*	54*	12*
Tanks . . . . .	5	150	0	0	15	0	0	0
Armored Vehicles . . . . .	25	200	0	99	50	0	109	29
Artillery (53mm & up) . . . .	40	146	0	24	75	0	50	0
Air Defense Artillery . . . . .	10	400+	0	30	12	0	24	0
Aircraft . . . . .	65	93***	11	103	95	2	141	26

\* Includes active duty forces, inactive militia and reserves as well as National Police

\*\* Includes 5,000 police, 2,000 Air Force and 600-700 Navy

\*\*\* Includes transportation aircraft that perform militarily associated missions

As of 30 September 1987

**FIGURE III-15**



such as El Salvador and Honduras cope with externally supported insurgencies and internal security problems.

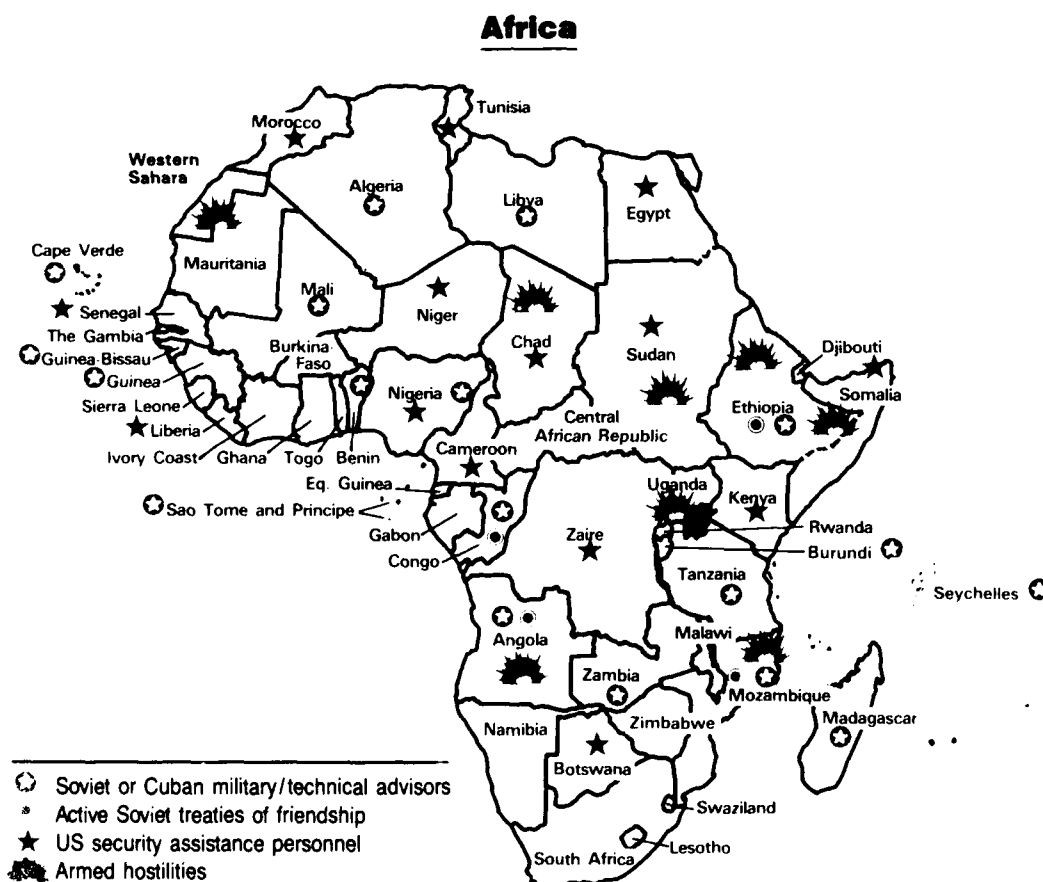
In addition, exercises are conducted with friendly Latin American armed forces to improve combined capabilities for defense and host-country self-sufficiency. Exercises improve host-country defensive capabilities, reassure democratic governments of US support, contribute directly to enhanced US military readiness, and increase allied confidence by supporting defensive interests in Latin America. The forward deployment of US forces in Panama and other periodic force deployments emphasize the US commitment to the region.

## Africa

US security interests in Africa stem from the strategic location of many African countries along important air and sea lines of communication, excellent

port and air facilities, and strategic materials. Many of these materials form the basis of super alloys required to produce advanced weapon systems, the drilling machinery required for enhanced recovery of energy reserves, or the launch vehicles required to pursue civilian and military programs in space. In addition, African countries constitute a significant political bloc in international fora. The Soviets and their surrogates view Africa as an area where their influence can be increased and the West's influence decreased. Libya's Qadhafi also desires to spread revolution to neighboring Arab and African states. The Chadian success in resisting Libyan encroachment is encouraging. Nevertheless, deteriorating economic conditions have increased unrest and made many regimes increasingly interested in cheap Communist arms to maintain power.

Around the Horn of Africa, the presence of Cuban forces and Soviet advisors in Ethiopia (Figure III-16)



Boundary representation is not necessarily authoritative.

As of 30 September 1987

FIGURE III-16

aggravates regional tensions while Ethiopia continues to underwrite, if not control, separatist movements in Somalia and southern Sudan. Internal power struggles in many emerging nation states pose additional stability challenges in the region. Elsewhere, the presence of 37,500 Cuban forces and approximately 1,200 Soviet advisors in a divided Angola continues to perpetuate an enervating civil war. Civil unrest in South Africa provides opportunities for Marxist-Leninist radical elements and threatens an orderly franchisement of black South Africans. Many of these issues cannot be solved militarily. Broad-based US assistance is essential in the face of natural disasters (such as drought and locust infestation) and the active interference of the Soviet Union, Libya, and Cuba. Only through long-term consistent support can the unity and self-sufficiency of African states be achieved.

### MARITIME ENVIRONMENT

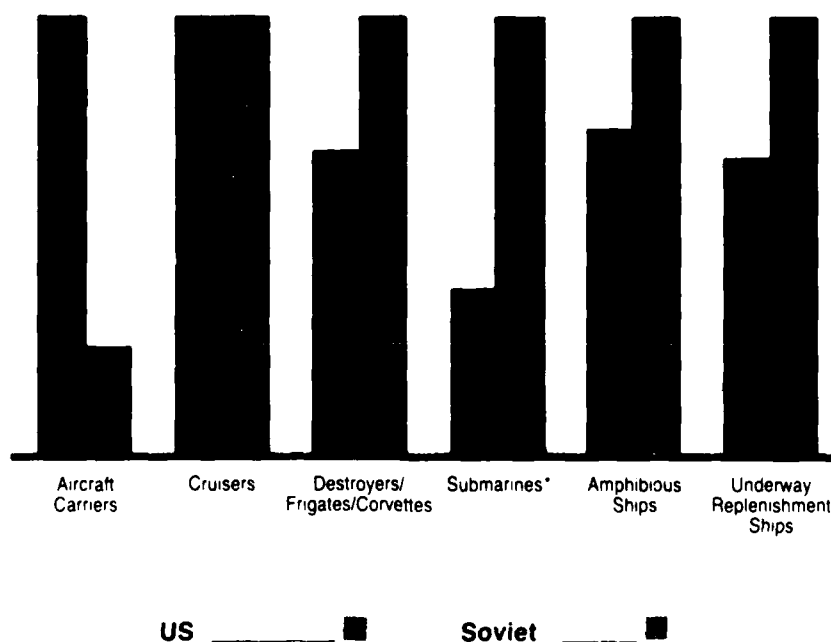
US national power and influence in the world depends on the ability to deploy, reinforce, and resupply US forces overseas and to defend global sea

lines of communication so essential to international trade and allied solidarity in peace, crisis, or war. Therefore, the US Navy maintains forces capable of seeking out and destroying enemy naval forces, maintaining local air and sea control, projecting forces ashore, supporting ground forces, and transporting forces and supplies. The maritime balance, therefore, must be viewed from a global perspective.

The Soviet Navy continues to evolve into a balanced force capable of performing sea control missions in waters contiguous to the USSR and sea denial operations. Figures III-17 through III-20 compare selected US and Soviet naval trends. The Soviets are introducing nuclear-powered and conventionally powered warships with greater firepower and endurance into their surface fleet. The introduction of the BREZHNEV-class aircraft carrier in the early 1990s will be a significant improvement over the KIEV-class and will enhance Soviet sea-borne air operations.

Soviet cruisers and guided missile destroyers joining the fleet have advanced antiship, antisubma-

### US-Soviet Principal Naval Forces

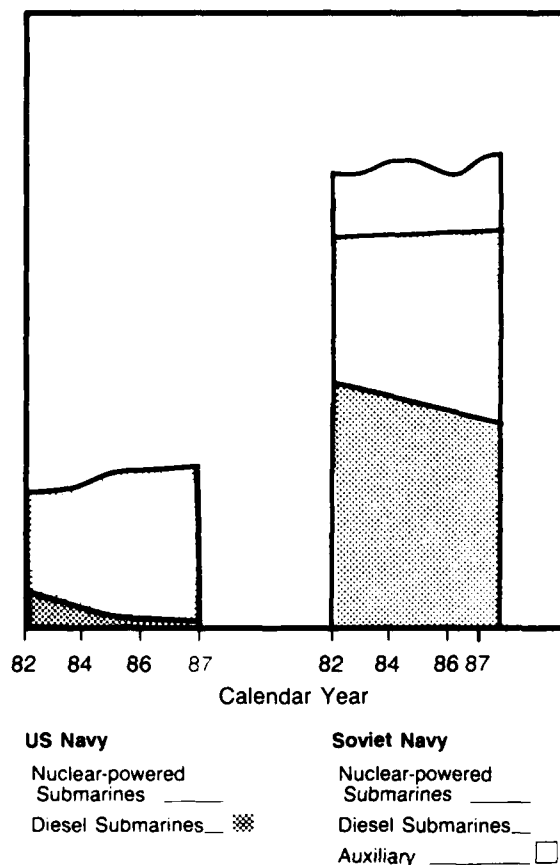


\* Includes SSGN, SSG, SSN, and SS. Reserve units not included

As of 30 September 1987

FIGURE III-17

### US-Soviet General Purpose Submarines \*



\* Includes SSGN, SSG, SSN, SS, SSAN, SSA, SSQN, SSUN, SST, and SSU.  
 Reserve units not included.

As of 30 September 1987

FIGURE III-18

rine, and anti-air weapon systems. The expansion and modernization of the general purpose submarine force includes adding new classes of nuclear-powered attack submarines (SSNs). Delivery of newer SSN attack submarines, such as MIKE, and the AKULA and SIERRA classes, indicates the Soviets are well aware of the technological limitations of their previous SSNs. The new classes are quieter and substantially better than previous Soviet SSNs and represent a great investment to reduce the longstanding US submarine technology advantage. Although the United States still holds this advantage, the gap is closing and will continue to close into the 1990s. Improved Soviet Naval Aviation (SNA)

### US-Soviet Amphibious Lift Capability-CY 1987

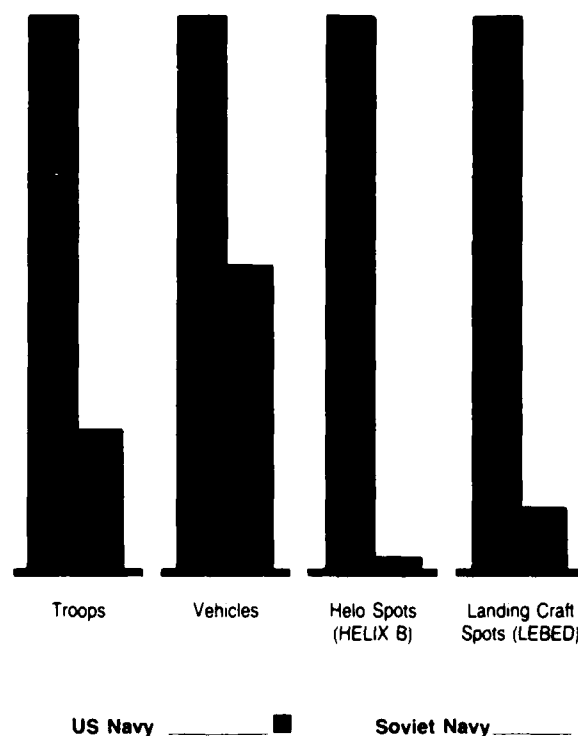


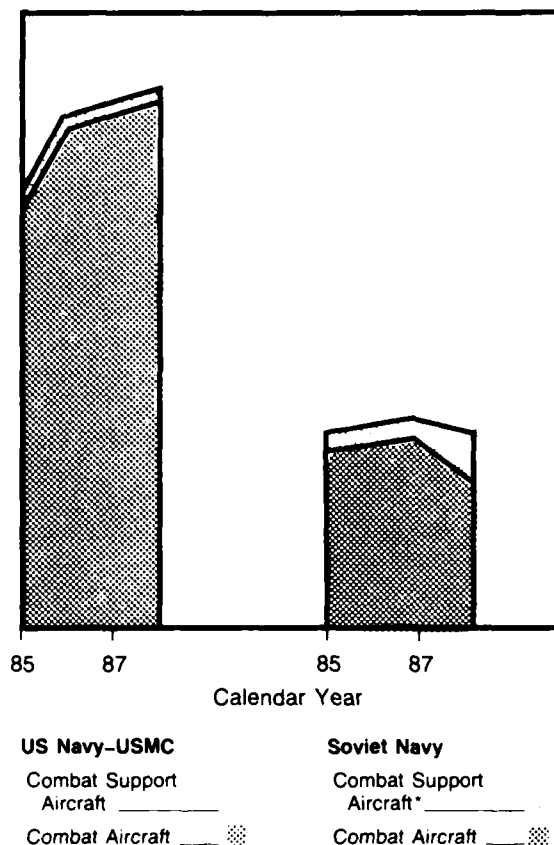
FIGURE III-19

land-based bombers pose an increasing threat to US and allied surface ships. Additionally, the Soviets are continuing land testing on catapult and arresting gear systems which are expected to be used on future large deck carriers.

US Navy surface forces still possess a significant advantage over the Soviet Navy in open-ocean anti-surface warfare. US land-based aircraft can also provide assistance in defending the SLOCs. P-3, B-52, and other aircraft with the capability to deliver mines and launch HARPOON antiship missiles now provide additional support against enemy surface targets. Land-based tankers and fighters operating in conjunction with the Airborne Warning and Control System (AWACS) provide additional capability against the SNA threat.

US naval capabilities will continue to lead the

## US-Soviet Naval Aviation Aircraft



As of 30 September 1987

FIGURE III-20

Soviets. The US Navy will maintain its open-ocean superiority and continue to improve its capability to operate in high-threat areas while performing missions in support of allies and forces ashore. Soviet naval forces will continue to be constrained by geography, and lack of sustainability.

### SECURITY ASSISTANCE

Security assistance programs contribute to US national security objectives by assisting allies and friends to meet their own defense needs and enable them to support collective security efforts. Security assistance is an essential element of US foreign policy and a cost-effective way to build positive government-to-government relations. Security assis-

tance is an essential element of a coalition strategy for cooperative defense. By sharing costs and effort, many countries can achieve a level of mutual security that they could not attain independently. By strengthening US allies and friends, security assistance programs also serve as an economy-of-force measure that will allow the United States to concentrate its available forces in the areas of greatest threat. For these reasons, the Joint Chiefs of Staff and the Services view security assistance as an integral part of US military strategy. However, the trend of decreased assistance for all recipients is severely limiting the effectiveness of the program.

### Security Assistance Objectives

In the years since World War II, the United States Congress and various Presidential Commissions often have debated the basic goals of our foreign assistance policies, i.e., whether they should be creative or reactive in purpose. As a practical matter, the program must be both creative and reactive to forces which threaten these creative purposes.

The primary military objectives of security assistance are to assist countries struggling to preserve their independence and enhance their democratic processes (not always easy to achieve in balance); engage local armed forces in the process of civic action and nation building as opposed to political in-fighting; encourage small countries to pool their resources in collective security arrangements; and ease potential burdens on US armed forces.

Our security assistance program also seeks to obtain and maintain the base and transit rights necessary to project US military power to such areas in peace, crisis, or war. Some of these bases have developed over a long time in support of forward-deployed forces and are virtually irreplaceable in location and original cost. Others form part of a worldwide network essential to the mobility, flexibility, and utility of our CONUS-based forces.

In sum, security assistance is a bargain for the American people in terms of the world we prefer to live in; the benefits of total force planning with friends and allies who share our interest in international peace and stability; and the utility of our conventional military forces when confronted with an international crisis apt to affect vital US interests.

### Elements of Security Assistance

The major components of security assistance are the Foreign Military Sales (FMS) Program, the FMS

Credit (FMSCR) Program, the Military Assistance Program (MAP), the International Military Education and Training (IMET) Program, the Economic Support Fund (ESF), and peacekeeping operations (PKO).

Of the four elements (FMSCR, MAP, IMET, and ESF), the mix of program elements will vary by country. A careful analysis of the recipient country's needs is conducted via the Annual Integrated Assessment of Security Assistance process by a combined team of senior country officials, US Country Team members, responsible CINC staff members, and representatives from appropriate government agencies. The resulting security assistance program recommended to Congress is tailored for the individual country. Beginning in FY 1985, FMSCR and MAP have undergone a precipitous decline in funding approved by Congress.

#### Foreign Military Sales and Foreign Military Sales Credit Programs

The FMS Program enables eligible governments to purchase defense equipment, services, and training from the United States on a cash, credit, or MAP-funded basis. FMSCR is available to countries proposed by the President as long as they meet provisions established by Congress. FMSCR has been included in the budget and all loans are made directly by the US government to recipient countries. For eligible countries, a portion of this credit is available as low-interest concessionary loans. Over 47 percent of the administration's proposed FY 1988 military security assistance budget would be allocated to FMSCR. Israel and Egypt together account for over 70 percent of these funds. Since this is a congressionally earmarked figure, FMSCR support for other nations often falls short of requirements. In FY 1988 Congress appropriated \$4049 million in FMSCR. This is a 8.4 percent cut from the FY 1988 administration request and equal to the FY 1987 congressional appropriation.

#### The Military Assistance Program

This grant program provides an account for designated countries that may be used to obtain defense equipment and selected services. MAP funds allow certain economically disadvantaged countries to improve their security and ability to contribute to collective defense. This program enables the United States to assist certain needy countries by further improving their security and contributes to collective defense without adding to their debt burden. In FY 1988 Congress appropriated \$700 million in MAP. This is

a 47 percent cut from the FY 1988 administration request and a 26 percent reduction from the FY 1987 congressional appropriation.

#### The International Military Education and Training Program

The IMET Program provides training to foreign military personnel and certain foreign government-sponsored civilians on a grant basis. IMET consists of formal courses, orientation tours, and on-the-job training. IMET students frequently assume high-level leadership and management roles in their armed forces and governments.

The FY 1988 IMET administration request remains about 0.6 percent of the total military security assistance budget. Figure III-21 depicts expenditures and numbers of students who have attended US military-sponsored training under IMET over the past 6 years. Since FY 1984, modernization programs for countries such as Portugal, Spain, and Turkey have required that an increased percentage of IMET funds be used to support the training of pilots and similarly skilled technical personnel. While modernization programs have resulted in a higher average cost per student, IMET enhances collective defense at a relatively low cost to the United States by providing valuable training to foreign forces. In FY 1988 Congress appropriated \$47.4 million in IMET. This is a 15 percent cut from the FY 1988 administration request and a 15 percent reduction from the FY 1987 congressional appropriation.

### Worldwide IMET Expenditures

Students Trained in US			
FY	Expenditures* (in millions)	Students Trained	Cost Per Student
82	46.2	6,317	7,314
83	46.0	6,861	6,705
84	52.8	5,967	8,855
85	56.2	5,880	9,557
86	52.2	6,394	8,228
87	56.0	6,436	8,701

\* Actual dollars/not adjusted for inflation

As of 30 September 1987

FIGURE III-21

### **Economic Support Fund**

The ESF provides economic assistance on a grant or low-cost loan basis to selected countries having special political and security interest to the United States. This very important Agency for International Development (AID) program is designed to help correct the economic problems of countries by funding and encouraging creation of growth industries. ESF attacks the root causes of LIC conditions (such as impoverishment, unchecked population growth, destruction of renewable resources, and disenchantment with institutional effectiveness) by fostering economic stabilization and growth. In FY 1988 Congress appropriated \$3188 million in ESF. This is a 11 percent cut from the FY 1988 administration request and a 17 percent reduction from the FY 1987 congressional appropriation.

### **Peacekeeping Operations**

PKO enable the United States to participate in multinational operations necessary to help prevent international conflicts. PKO were established to provide for that portion of security assistance devoted to programs such as the Multinational Force and Observers and the US contribution to the UN Truce Supervision Organization (UNTSO) in Palestine.

### **Security Assistance Initiatives**

Over the past few years, legislative initiatives have been introduced to increase the flexibility and effectiveness of the security assistance program. These initiatives were designed to provide more flexibility in planning, production, and delivery, thus making security assistance a more responsive tool of US national security objectives. Congressional actions during the appropriations process (earmarking, reductions) actually take away flexibility. Congressional initiatives like the Southern Region Amendment (SRA) have usually been taken only for political reasons.

Defense industrial relations between the United States and its NATO European allies are witnessing a greater emphasis on joint research and development and balanced industrial cooperation. This evolution is referred to as Defense Cooperation in Armaments. Although actions in this area are well advanced among the northern tier nations, our southern flank allies are seeking to complement their reliance on US security assistance with bilateral agreements designed to strengthen their national defense industries. The ability of US allies to produce their own spares and ammunition for their US-origin equipment is critical to their coalition warfighting capability because their resources are critical for US

forces as well. How the United States approaches the Defense Cooperation in Armaments is integral to its future relationship with the NATO allies. The military and civilian positions and supporting funds have been identified and allocated to the US offices of defense cooperation within the European countries. With the Defense Cooperation in Armaments organization in place, USCINCEUR will be implementing the DOD initiatives in R&D cooperation and defense industrial cooperation. Along with the security assistance program, this will result in the improved collective security and interoperability of NATO. Defense Cooperation in Armaments organizations are also being established in Japan and the ROK.

### **Soviet Military Assistance**

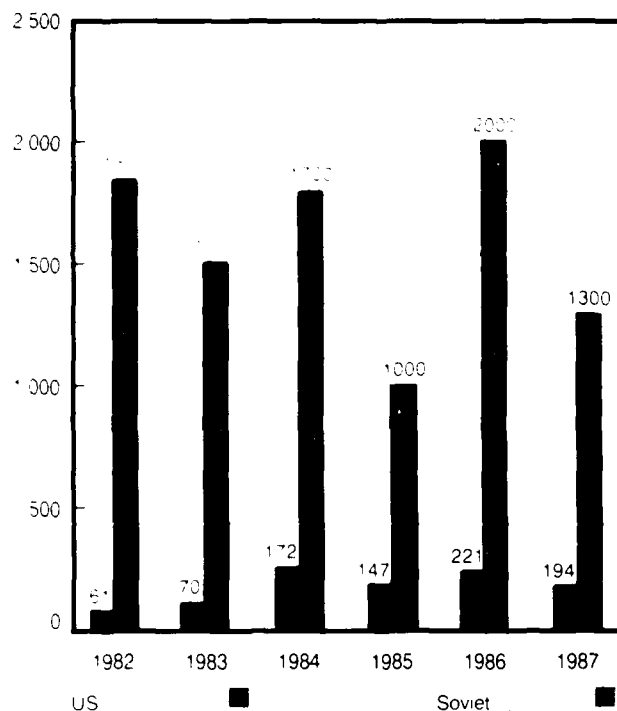
Weapon transfers continue to be an important Soviet means of projecting influence. Over the past 5 years, Soviet arms sales agreements have totaled \$79 billion. Although Soviet arms agreements are sometimes directed toward disrupting regional stability, recipients have been attracted by favorable financial terms and quick delivery. In recent years, the sale of military equipment has become a more important source of hard currency and commodities for the Soviet Union. In several instances, Soviet weapon transfers have provided a step toward acquiring base access rights abroad. Weapon transfers also provide an entree for Soviet advisors into the recipient's military establishment, allowing them to exert influence through control of training, maintenance, and spare parts and the sale of newer equipment.

Since 1955, nearly 85,000 military personnel from less-developed countries have been trained in the Soviet Union and Eastern Europe. In 1987, approximately 22,500 Soviet military advisors and technicians were stationed in nearly 30 NSWP countries where they played a central role in organizing, training, and influencing client armed forces.

The Soviet Union continues to provide a significant amount of military aid to countries in Central America, the Caribbean Basin (Figure III-22), and Africa (Figure III-23). The Soviets view the Middle East, Africa, and Southwest Asia as regions of great strategic importance and have maintained an especially high level of military assistance in those regions (Figure III-24). These figures compare Soviet military assistance deliveries with US programs. For example, over the past 10 years Soviet aid to Ethiopia has been 10 times greater than that provided by the United States to the neighboring nations of Kenya, Sudan, Somalia and Djibouti.

### Military Assistance Deliveries to Countries in Central America and Caribbean Basin\*

Millions of Dollars\*\*



\* Does not include Mexico and Venezuela

\*\* Numbers and types of equipment delivered have not changed; revised costs reflect current information

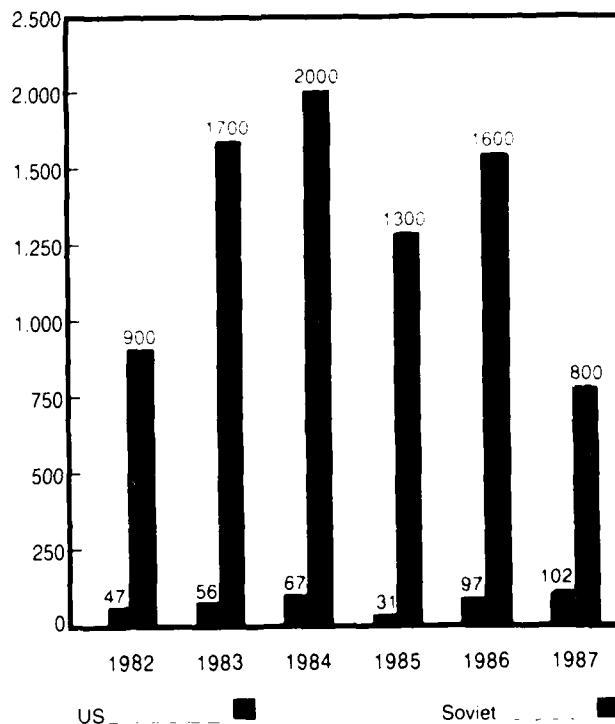
U.S. Figures are for fiscal year. Soviet figures are for calendar year and 1987 figures are through June 1987

As of 30 September 1987

FIGURE III-22

### Military Assistance Deliveries to Countries in Central, South and West Africa

Millions of Dollars\*



\* Numbers and types of equipment delivered have not changed; revised costs reflect current information

U.S. figures are for fiscal years. Soviet figures are for calendar years and 1987 figures are through June 1987

As of 30 September 1987

FIGURE III-23

### Outlook for US Security Assistance Funding

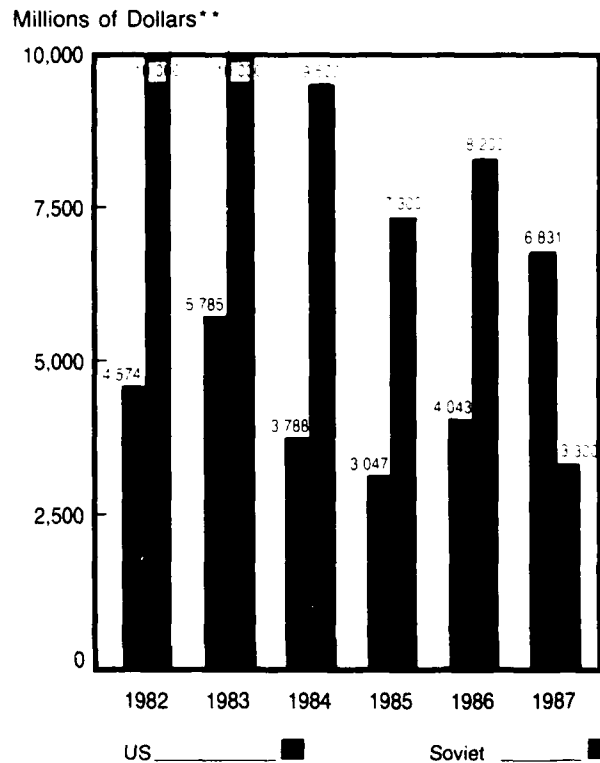
Funding of US security assistance is experiencing a major transition. From the beginning of President Reagan's tenure, this aspect of national security has experienced steady annual funding increases through FY 1984. Beginning in FY 1985 and continuing in FY 1988, the political momentum for a balanced budget was one of several factors causing security assistance funding for friendly nations to level off and then significantly decrease (Figure III-25). The FY 1987 and 1988 budgets reflected congressional

cuts to the President's proposed security assistance program combined with heavy earmarking for two countries, Israel and Egypt.

### FY 1988 Funding

The President's proposed FY 1988 security assistance budget request represented a 15 percent increase over the austere FY 1987 budget appropriated because of continuing Third World defense requirements and an increased Soviet presence. As in FY 1987, the security assistance budget request reflects a balanced consideration of global requirements (Figure III-26).

### Military Assistance Deliveries to Countries in Middle East North Africa, and Southwest Asia\*



\* Includes Israel and Egypt

\*\* Numbers and types of equipment delivered have not changed; revised costs reflect current information.

\*\*\* U.S. figures are for fiscal years. Soviet figures are for calendar years and 1987 figures are through June 1987.

As of 30 September 1987

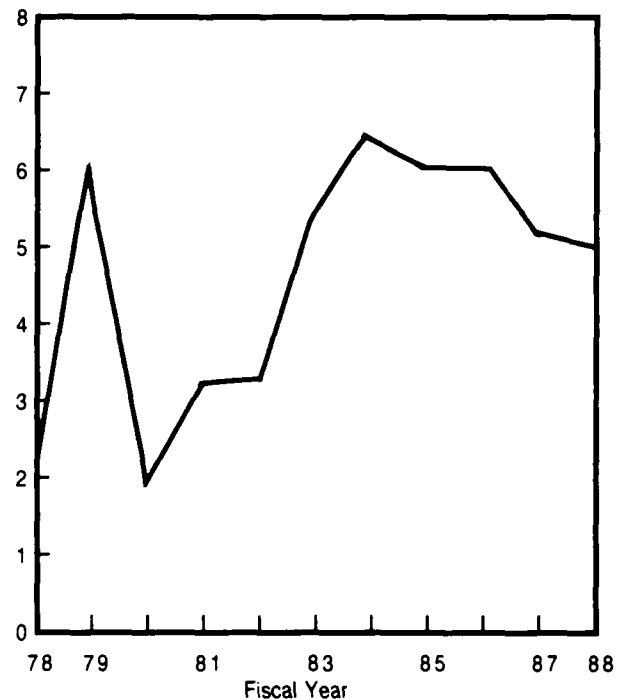
FIGURE III-24

Figure III-27 shows the distribution of the 1988 budget appropriated by Congress. The budget request of \$5.8 billion has been reduced to \$4.79 billion while the earmarks for Israel and Egypt remain constant at \$3.1 billion. Additional earmarks are set for Pakistan, Turkey, and Greece which total \$1.1 billion and the Philippines, Morocco, Tunisia, and Guatemala are earmarked a total of \$0.2 billion. This drastic funding reduction will cause significant external security problems for the United States.

### Security Assistance Budget\*

(Current \$)

Billions of Dollars



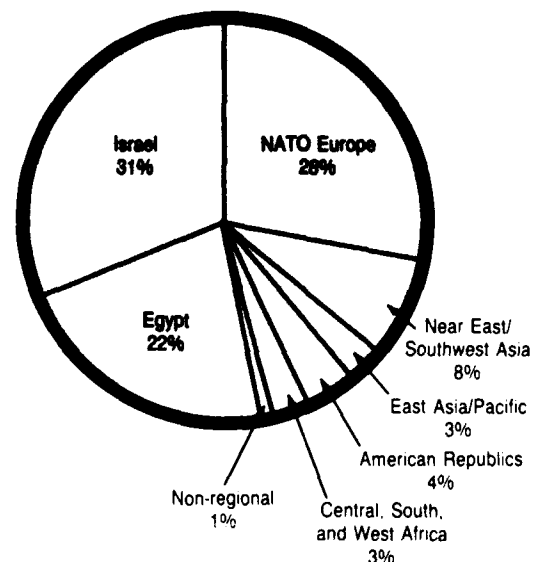
\* FMSCR, IMET, and MAP

As of 30 September 1987

FIGURE III-25

### FY 1988 Security Assistance Administration Proposal\*

(5.8 Billion \$)



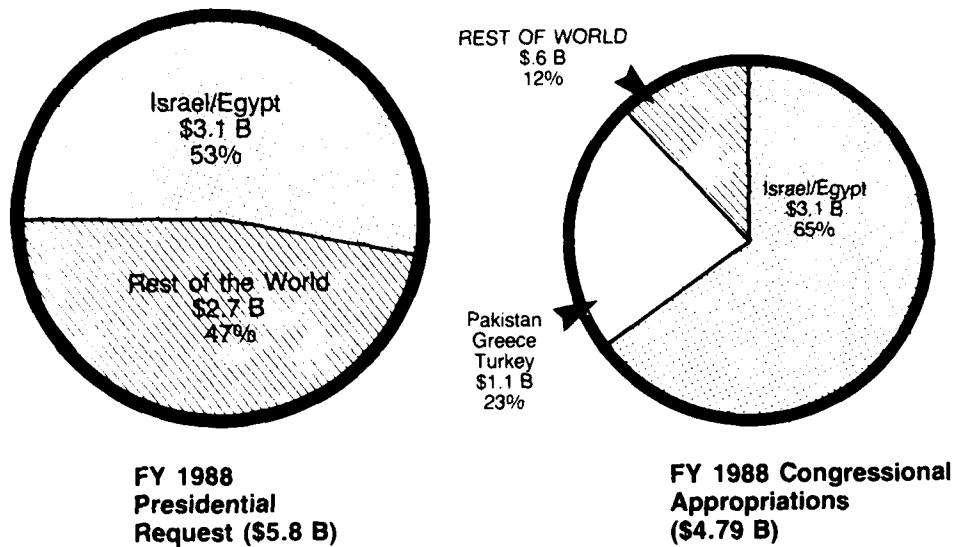
\* Estimated Administration proposal (includes FMSCR, IMET, and MAP)

As of 30 September 1987

FIGURE III-26



## FY 1988 Security Assistance Budget



Includes FMSCR, IMET, and MAP.

As of 30 September 1987

**FIGURE III-27**

### Implications of Severely Reduced Security Assistance Funding

Congress' action in again cutting the FY 1988 Security Assistance budget continues a trend that will result in significant degradation of US national security, undermine the viability of the containment strategy, and reduce US political standing as a global leader. Congress has appropriated \$4,749 million in FY 1988 for security assistance (FMSCR and

MAP). From that will be subtracted earmarked funding for Israel (\$1,800 million), Egypt (\$1,300 million), NATO southern flank countries (\$833 million), Pakistan (\$260 million), Philippines (\$125 million), Morocco (\$52 million), Tunisia (\$30 million ceiling), and Guatemala (\$7 million). The resulting \$342 million cannot possibly meet the remaining global US security assistance commitments.

## CHAPTER IV. NUCLEAR FORCES

### INTRODUCTION

This chapter compares US and USSR strategic and nonstrategic nuclear forces. Maintaining the nuclear force balance is critical to US and allied security. Perceived or actual deficiencies in US nuclear force capabilities could reduce assurance of deterring aggression against US and allied interests and increase the risk of attempted coercion. Significant progress has been made in redressing force structure trends unfavorable to the West. This progress has not, however, fully compensated for continued large Soviet investments in improving their nuclear force capabilities. Continued US modernization programs will enhance nuclear deterrence by deploying capable, technologically advanced systems. Modernization of all US nuclear force elements, including warning systems and C<sup>3</sup>I capabilities, is essential to increase stability and to further reverse negative trends in the nuclear balance.

### STRATEGIC NUCLEAR FORCES

The Soviets' strategic doctrine is to be prepared to survive and prevail in a nuclear war, even though they realize the catastrophic consequences. The sustained Soviet strategic buildup during the past 20 years reflects this thinking. Figure IV-1 shows the distinct Soviet advantage in total ballistic missiles. The Soviets continue to improve all aspects of their strategic offensive forces; they have significantly modernized C<sup>2</sup> capabilities; and they continue to build up their strategic defenses. The Soviets are convinced their strategic nuclear forces will deter attacks on the Soviet Union and reduce the will of others to challenge Soviet political or military actions in general.

The US strategic nuclear posture is based on the Triad, a combination of land-based intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and long-range bombers. The Triad provides a balanced range of retaliatory options, with reliable warning systems and redundant C<sup>2</sup> capabilities providing connectivity and positive control of the strategic forces by the NCA. The Triad's variety of forces complicates Soviet first-strike planning and allows the United States the flexibility for a measured response to any type of attack. Additionally, the current development of US strategic defense systems will help deter the Soviets in the future by reducing their confidence in the potential success of a strategic attack against the United States. Past US strategic

### Strategic Offensive Forces

US		Soviet	
<b>ICBMs</b>			
MINUTEMAN II	450	SS-11	420
MINUTEMAN III	523	SS-13	80
PEACEKEEPER	27	SS-17	145
	1,000	SS-18	308
		SS-19	350
		SS-25	About 100
			About 1,380
<b>SLBMs</b>			
POSEIDON (C-3)	256	SS-N-5	39
TRIDENT I* (C-4)	384	SS-N-6	256
	640	SS-N-8	286
		SS-N-17	12
		SS-N-18	224
		SS-N-20*	100
		SS-N-23*	64
			981
<b>Bombers</b>			
B-52G	167	BEAR	160
B-52H	96	BISON	15
FB-111	61	BACKFIRE	305
B-1B	66		480
	390		

### Approximate Totals

	US	Soviet
Delivery Vehicles		
• Missiles	1,640	2,361
• Bombers	390	480

\* Includes SLBMs potentially carried on TRIDENT, TYPHOON, and DELTA-IV submarines on sea trials

As of 30 September 1987

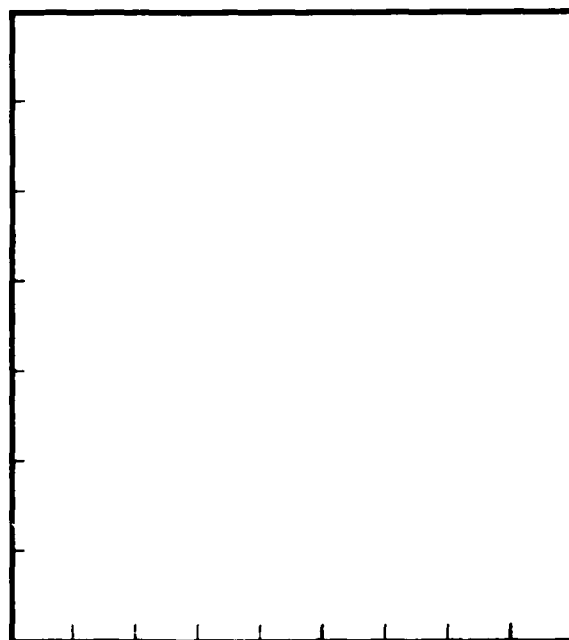
FIGURE IV-1

force modernization efforts have not kept pace with Soviet strategic force improvements. Figure IV-2 illustrates the progressive growth of Soviet delivery vehicles. With sustained commitment, the current strategic modernization program will continue the positive US trend in force effectiveness.

Until such time as the nuclear powers actually phase out offensive nuclear weapons, US and allied security will continue to depend upon a credible

## Strategic Forces \*

### Strategic Nuclear Delivery Vehicles (SNDVs)



75 80 85 87 75 80 85 87  
Calendar Year

<b>US</b>		<b>Soviet</b>	
Bomber	<input type="checkbox"/>	Bomber	<input type="checkbox"/>
SLBM	<input type="checkbox"/>	SLBM	<input type="checkbox"/>
ICBM	<input type="checkbox"/>	ICBM	<input type="checkbox"/>

\* Total active inventory (includes FB-111 and BACKFIRE, not included in SALT)

As of 30 September 1987

FIGURE IV-2

and effective Triad of ICBMs, SLBMs, and manned bombers.

## Strategic Offensive Forces

### Soviet Offensive Force Modernization

The Soviets have more than 30 new strategic offensive systems in development. Projections for the next decade include new solid-propellant ICBMs, both silo-based and mobile; a liquid propellant SS-18 follow-on; and improvements to the currently deployed ICBMs. Follow-on systems are expected to have greater accuracy and targeting flexibility. SLBM projections include continued deployment of the SS-N-20, SS-N-23, a SS-N-20 follow-on, and

a new SLBM. The deployment of the BEAR-H and impending deployment of the BLACKJACK-A intercontinental bombers will significantly increase the airbreathing threat from either the bomber itself or its standoff missiles.

The predominant system in the Soviet nuclear arsenal is the land-based ICBM. The Soviets have significantly increased the capability of this force by deploying modern, highly accurate missile systems with high-quality reentry vehicles (RVs). Today, the most accurate versions of the SS-18 missile alone are capable of holding at risk most time-urgent and hardened targets in the United States. Increased capability is also manifest in the Soviets' considerable effort to increase strategic force survivability by introducing road- and rail-mobile ICBMs; the SS-25 and the forthcoming SS-X-24, respectively. These are two examples of strategic relocatable targets (SRTs). Such SRTs could form the backbone of a Soviet strategic reserve force capable of eluding US targeting and retaliation. Countering such systems will require improved US detection capability and more responsive C<sup>3</sup>I. SRTs will require means to both target and attack them throughout any conflict. Without continued strategic modernization, these means will not be available.

The Soviets are also modernizing their SLBM force. Since 1974, they have deployed four new nuclear-powered ballistic missile submarine (SSBN) classes. The DELTA-II, DELTA-III, and DELTA-IV all have improvements in both submarine and missile systems. The DELTA-II, and the earlier DELTA-I, carry the SS-N-8 single RV missile; the DELTA-III carries the SS-N-18 missile, with multiple independently targetable reentry vehicles (MIRVs). To date, the Soviets have launched five TYPHOON-class SSBNs, four of which are operational. TYPHOON-class submarines carry 20 MIRVed SS-N-20 missiles. These missiles are armed with 6-9 RVs and have a range of approximately over 4,500 nm. All of these newer systems can strike targets throughout most of the United States from Soviet home waters, allowing them to remain under the protection of land-based defense systems, complicating the US ASW problem against them. Four DELTA-IV-class ballistic missile submarines have been launched: two are operational, two are on sea trials. The DELTA-IV carries 16 MIRVed SS-N-23 missiles. In the future the SS-N-23 may be retrofitted into some DELTA-III SSBNs. The SS-N-21 long-range cruise missile is now operational. This nuclear-armed missile intensifies the

air-breathing threat against both CONUS and theater targets.

The Soviets continue to improve and diversify their strategic bomber force and airbreathing threats to CONUS. New production BEAR-H long-range bombers continue to enter the force as AS-15 ALCM carriers and now conduct regular combat patrols to various points off the North American coast. The BLACKJACK is a long-range intercontinental bomber, similar in appearance to the US B-1B, with probable deployment beginning in 1988. In addition to the AS-15 ALCM it will carry the AS-X-16 SRAM. Although considered primarily theater and maritime weapons, BACKFIRE bombers are estimated to have the technical capability to reach CONUS, depending on operational procedures.

### US Offensive Force Modernization

Since the early 1970s, US strategic force modernization has focused on modifications to existing systems, with new technology systems beginning to appear in the 1980s. This effort has begun to redress what had previously been adverse trends in strategic force parity. Given Soviet deployment of the SS-25, probable deployment of the SS-X-24, and the projected development and deployment of an expanding array of other mobile strategic threats, particular emphasis is being focused on the US capability to locate and attack mobile strategic targets. The continued deployment of modernized systems will demonstrate the US commitment to maintaining an effective deterrent force.

The MINUTEMAN force is being modernized to ensure its continued reliability and responsiveness. Major initiatives have included fielding more accurate and higher yield warheads for a portion of the MINUTEMAN III force; a force-wide MINUTEMAN III guidance upgrade program, now approximately 97 percent complete; and initiating a force-wide MINUTEMAN II guidance system accuracy and reliability upgrade program. In 1986 the United States began deployment of 50 hard-target-capable PEACEKEEPER missiles in existing MINUTEMAN silos at F.E. Warren AFB, Wyoming. These will reach full operational capability (FOC) in 1988. The silo PEACEKEEPERS, and 50 more in a rail-garrisoned mode (FY1992 initial operational capability (IOC)), will provide prompt, highly accurate weapons against time urgent targets, and a partial answer to our shortfall in hard-target-kill capability. The rail-mobile PEACEKEEPER will greatly complicate the Soviet tar-



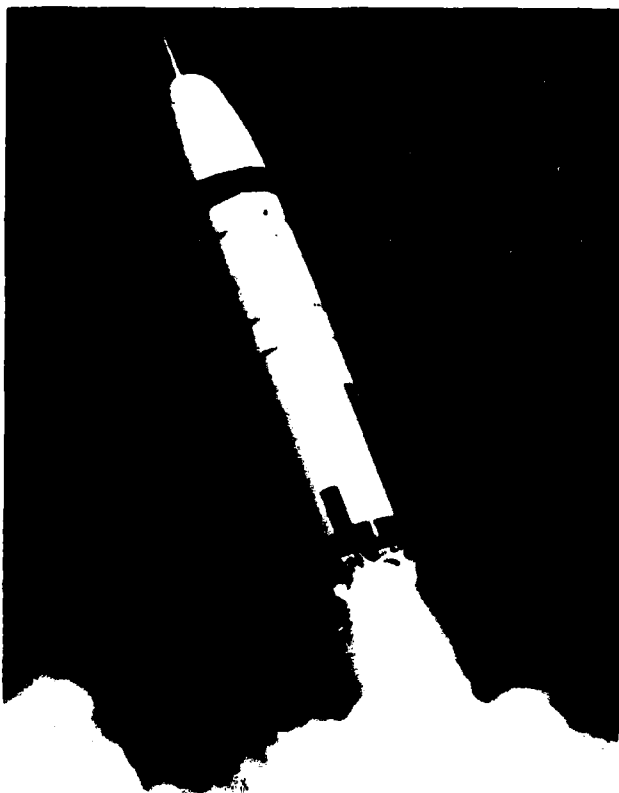
### PEACEKEEPER LAUNCH

geting problem, thus enhancing ICBM force survivability.

SLBM force modernization began in 1972 with the conversion from POLARIS (A-3) to the POSEIDON weapons system. The POSEIDON (C-3) missile provides the sea-based leg of the Triad with longer range, improved accuracy, and a MIRV capability. In addition, between 1979 and 1983, 12 POSEIDON-class submarines were retrofitted with the more accurate, much longer range, and higher yield TRIDENT I (C-4) missile. This SLBM allows greatly expanded patrol areas. The C-4 missile provides the United States a limited capability to launch against Soviet targets from US waters. The first eight OHIO-class SSBNs were fitted with C-4 missiles. The OHIO-class SSBN will also support the hard-target-capable TRIDENT II (D-5) missile now in testing. The D-5 missile delivers a larger payload than current SLBMs, with significantly improved accuracy, at a nominal range of 4,000 nm. As with the C-4, the D-5's range improvement increases the available patrol areas over the POSEIDON C-3 force. Begin-



**TRIDENT SUBMARINE**



**TRIDENT I SLBM**

ning in 1989, the United States will deploy the D-5 on the ninth and subsequent OHIO-class submarines. The earlier OHIO-class submarines will be retrofitted with D-5 during overhaul. Although the ultimate force size has not been determined, the United States will procure at least one TRIDENT SSBN per year. The improved accuracy-payload combination of the D-5 will compliment the PEACEKEEPER in increasing the hard-target-kill capability of the US strategic ballistic missile force. At any given time, a designated portion of the alert SLBM force can respond to time-urgent targeting requirements.

The majority of the B-52 force is now ALCM-capable. Aircraft avionics modifications are improving the penetration capability of the B-52 against

increasingly dense and sophisticated Soviet air defenses. As strategic modernization progresses, the B-52Hs, in addition to the already modified B-52G, are being modified to carry cruise missiles. The B-1B is an important Triad modernization program. This advanced manned bomber's high-speed, low-altitude capability, reduced radar cross-section, and electronic countermeasures (ECM) equipment are designed to complicate detection and interception by Soviet defenses, and will allow its penetration of Soviet defenses well into the 1990s. The strategic modernization program includes development of an advanced technology bomber (B-2) incorporating low-observable characteristics. Designing low-observable technologies into both the B-2 and the Advanced Cruise Missile (ACM) will do much to counter improved Soviet air defense effectiveness. Deployment of the B-2 in the early 1990s will ensure a continued US capability to penetrate hostile airspace to attack the full range of fixed targets and present an increased threat to some relocatable targets.



**B-1B STRATEGIC BOMBER**

An improved short-range attack missile, the SRAM II, will fill an important strategic role through the 1990s and beyond. The SRAM II will replace the aging SRAM-A, and will provide the necessary performance to counter improving Soviet air defenses.

### **Strategic Offensive Force Potential**

Assessment of the global military environment is a complex process involving quantitative analyses combined with judgments concerning intangible and unquantifiable factors such as leadership, training, and morale. Static force measurements provide useful comparisons of potential capabilities, though not the dynamics of forces in war. Another measure of the military balance is obtained when static force comparisons are combined with dynamic analyses incorporating operational factors.

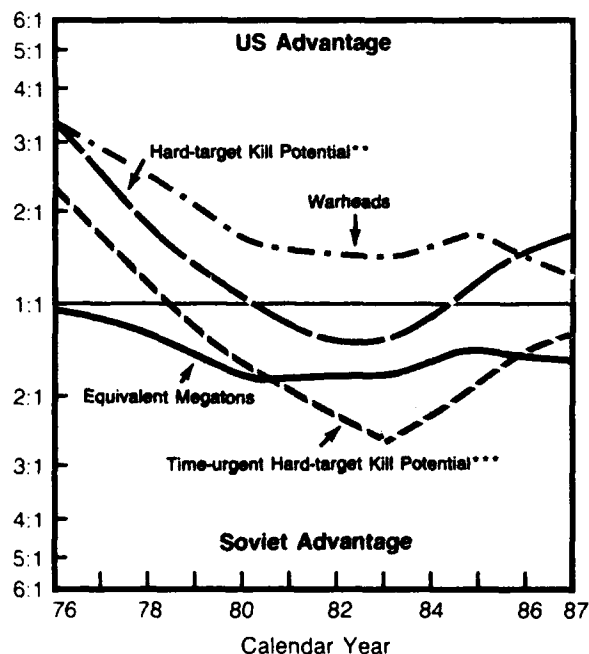
US and Soviet strategic force potential can be compared by an examination of such static measures as hard-target-kill, equivalent megatons, and numbers

of warheads. The trends in four static strategic nuclear force measures are shown in Figure IV-3. The reversal, beginning in the early 1980s, of downward trends in US potential relative to the Soviets, reflects the effect of recent strategic modernization programs. The four lines of relative potential shown are summations of objective measures within the given attribute. Although they do not necessarily represent adequacy for a specific mission, they are useful in showing trends.

The principal elements of Soviet force upgrades are the deployment of new classes of ICBMs and SLBMs, modernization of their submarine force, and a concomitant increase in high-quality strategic warheads. Recent major strategic systems deployed are shown in Figure IV-4. The Soviets have increased ICBM strategic warheads alone more than threefold over the past decade. During the same period, the number of total US strategic warheads transitioned

### Strategic Forces\*

#### Preattack Static Ratio Comparison



\* Total active inventory (includes FB-111 and BACKFIRE)

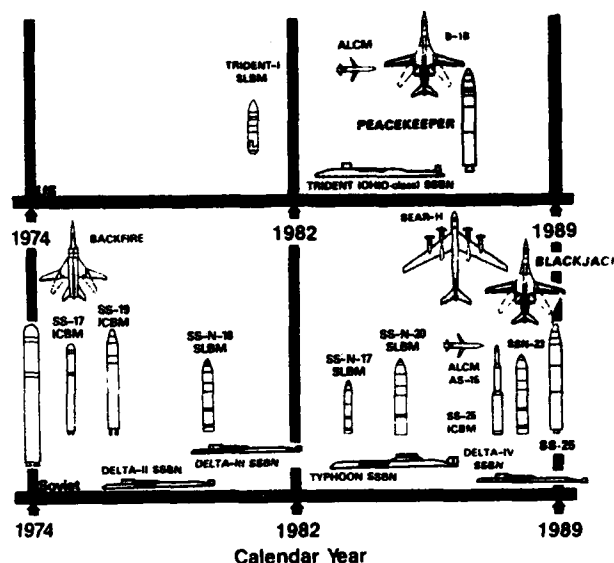
\*\* Hard-target kill potential represents ability to destroy targets reinforced to withstand some effects of a nuclear blast.

\*\*\* Calculations are based on potential against identically hardened targets

As of 30 September 1987

FIGURE IV-3

### Major Strategic System Deployments



As of 30 September 1987

FIGURE IV-4

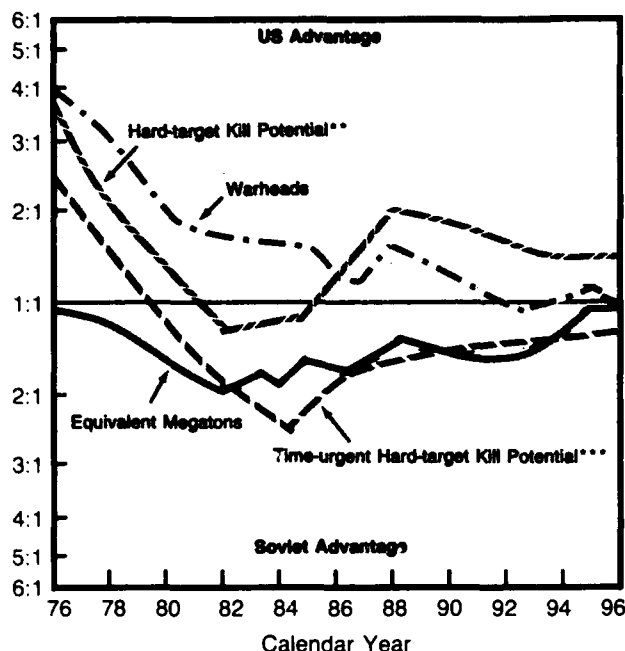
from a decline to an increase, though by a much smaller percentage than the Soviets.

Figure IV-5 compares static measures of the US and Soviet strategic offensive force capability for the period 1975 through 1995 and includes current accuracy estimates for the PEACEKEEPER and SS-18 ICBMs. The force projections used were a non-treaty-constrained continuation of current Soviet trends and programmed US force modernization.

Analysis of Figure IV-5 shows that trends favoring the Soviets were reversed in the mid-1980s, when the benefits of US modernization programs begin to show effect. The projected quantitative and qualitative growth in Soviet offensive weapons should continue to be offset if planned US modernization efforts continue. The increased effectiveness of the PEACEKEEPER ICBM, B-1B, POLARIS/TRIDENT C-4, combined with the high potential of the TRIDENT II D-5 and B-2, should help counterbalance the Soviet hard-target-kill potential (HTKP) represented by their SS-18 force. Calculation of HTKP, however, did not consider the alert status of forces at the time of execution, that Soviet ICBM silos are much more hardened than those of the United States, or that Soviet air defenses are far more extensive. All of the projections assume the Soviets will not deploy forces in excess of current projections.

## Strategic Forces \*

Preattack Static Ratio Comparison  
(with current Soviet trends)



\* Total active inventory (includes FB-111 and BACKFIRE and deployment of 100 PEACEKEEPERS)

\*\* Hard-target kill potential represents ability to destroy targets reinforced to withstand some effects of a nuclear blast.

\*\*\* Calculations are based on potential against identically hardened targets.

As of 30 September 1987

FIGURE IV-5

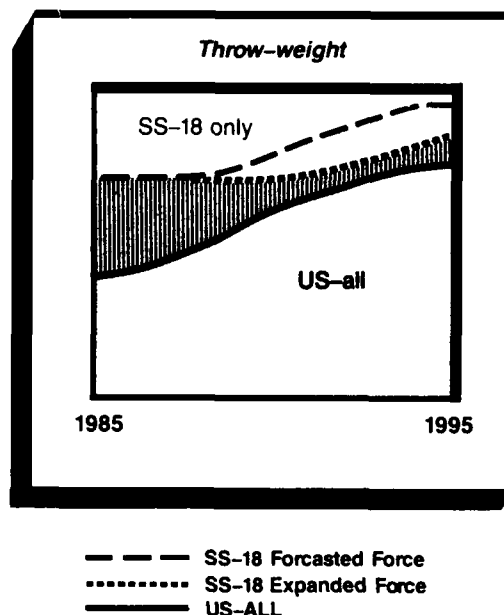
These factors emphasize the importance of continued US modernization efforts. By 1989 modernized US systems should also mitigate the Soviet advantage in equivalent megatons, however, the Soviets will still retain an advantage.

Despite US modernization efforts, and as shown in Figure IV-6, the projected Soviet SS-18 force will retain more throw-weight potential than the combined force of all US ICBMs and SLBMs.

## Strategic Offensive Force Effectiveness

The Soviets have sought to protect their war-fighting capability in several ways. They have hardened ICBM silos to levels well above those of US silos, and are deploying two new generation mobile missiles systems. The antiballistic missile (ABM) system deployed around Moscow is being upgraded,

## SS-18 Throw-Weight vs Entire US Missile Force (ICBM & SLBM)



As of 30 September 1987

FIGURE IV-6

a ring of large phased-array ballistic missile warning radars that could serve as the foundation for a nationwide ABM system is under construction, and a vast network of hardened underground facilities for key leadership and civilian work force personnel has been created. Detailed plans exist for wartime dispersal of conventional forces and urban populations. Additional Soviet protective measures include improvements in surface-to-air defensive forces, counterforce capabilities, reload and refire capabilities, and dispersed deployment of strategic offensive systems.



AIR-LAUNCHED CRUISE MISSILE

## Command and Control

### Soviet Command and Control

The Soviets have established a comprehensive, redundant system of both fixed and mobile command facilities to direct their strategic nuclear and theater nuclear forces. The fixed wartime command posts are mostly near-surface bunkers but include deep underground complexes to protect the Soviet equivalent of the NCA, and the General Staff from the effects of nuclear war. Command post bunkers equipped with antennas and remote, transmitter and receiver facilities have also been provided for the field commands of each force component. This comprehensive system of hardened command post facilities is supplemented by an array of field-mobile, trainborne, and airborne command and communication platforms.

The Soviet command post network is linked by an equally redundant set of communications systems. These communications systems are used to control strategic offensive and defensive forces, theater forces, and intelligence collection and processing. As a whole, the Soviet C<sup>3</sup> system appears capable of satisfying the strict Soviet requirements for survivability, reliability, and resistance to jamming.

### US Command and Control and Related Intelligence Systems

The credibility of the US strategic deterrent depends on maintaining continuous, positive C<sup>2</sup> of Triad employment. US C<sup>2</sup> systems require security, speed, flexibility, reliability, survivability, interoperability, and endurance to assure connectivity before, during, and after a nuclear attack.

C<sup>2</sup> systems must provide timely strategic and tactical warning and information to all key nuclear command and control decisionmakers. These systems must define the nature and extent of the attack to allow appropriate defensive and damage-limiting actions and must permit the President to direct appropriate responses through the chain of command. Integrated tactical warning and attack assessment (TW/AA) sensors and communications must provide timely, unambiguous warning of attacking missiles, aircraft, and other space- or ground-based attack systems to the NCA and the nation's primary command centers.

Reliable warning requires rapid detection of an imminent or actual attack by at least two different sensors. Multiple US ground-, air-, and space-based systems are designed to detect and transmit attack

warnings or to confirm the attack warnings of other systems. Current strategic modernization actions include integrated TW/AA systems.

Many systems are vulnerable to high-altitude nuclear effects. Numerous system improvements are being introduced to reduce such communications uncertainties during attack and provide the NCA more effective warning and assessment time for force management. Sample improvements include jam-resistant, EMP-hardened secure communications equipment, laser communications links for satellite warning systems, secure voice conferencing, improved HF equipment, low-frequency (LF) to ELF communications, and extremely high-frequency (EHF) and super-high frequency (SHF) communications satellites.

The Worldwide Military Command and Control System (WWMCCS) provides the means for the NCA and CINCs to direct and control the operations of US military forces in crises and during conventional or nuclear war. The most survivable element of the WWMCCS is a group of airborne command posts and communications relay aircraft based worldwide, referred to as the WABNRES (WWMCCS Airborne Resources) system. In the event ground systems are damaged or destroyed, the WABNRES provides communications for directing strategic nuclear forces.

The National Emergency Airborne Command Post (NEACP) is the central manager for the WABNRES system. NEACP is based inland to ensure manning, launch, and survival in a surprise attack. Conversion of the NEACP fleet to the E-4B (a Boeing 747 derivative), and improvement of automatic data processing, secure satellite communication, and secure-voice equipment, have increased this system's



INTERIOR, E-4B NEACP



support of the NCA. Actions to increase the aircraft's postattack endurance are under way.

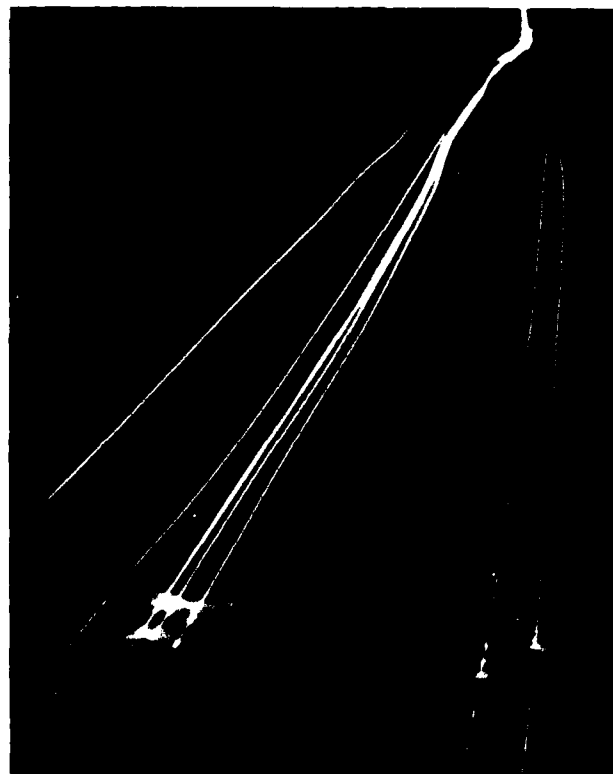
To ensure the safe, positive control launch of strategic aircraft and receipt of NCA decisions by strategic forces during the critical early stages of an attack, the United States is deploying the Ground-wave Emergency Network (GWEN), Defense Satellite Communications System III (DSCS III), and the Jam Resistant Secure Communications Program (JRSC), and is developing Milstar, a new communications satellite. The C<sup>2</sup> systems on airborne command posts are being upgraded to improve performance and to protect against high-altitude nuclear detonation effects. Deploying the E-6A TACAMO replacement aircraft and the ELF communications system will modernize strategic connectivity to SSBNs. Later introduction of satellite laser communications (SLC) will provide redundant connectivity with the submarine force.

The Nuclear Planning and Execution System will enhance data processing capabilities for the National Military Command System (NMCS) and CINCs. The Nuclear Detonation Detection System (NDS) on NAVSTAR Global Positioning System (GPS) satellites will significantly improve assessment capabilities.

In keeping with the US promise of retaliation against any attacker, the United States must have a rapid, coherent, secure, and flexible method for assisting decisionmakers in formatting and distributing nuclear control orders issued by appropriate authority. To maintain the advantage in this area, a system to ensure that strategic and nonstrategic emergency action messages are issued much faster, with greater security and reliability, is being developed. This is another element of the strategic modernization program.



**DSCS III COMMUNICATION SATELLITE**



**PEACEKEEPER RE-ENTRY VEHICLES**

## **STRATEGIC NUCLEAR DEFENSE**

The Soviet Union has pursued a full range of strategic defensive programs to protect leaders and vital governmental functions and limit damage from retaliation. An effective US strategic defense system would enhance deterrence by increasing Soviet uncertainty about the effectiveness of a nuclear attack and reduce their confidence of a successful first strike. The US SDI focuses on providing such a defensive deterrent.

### **Missile Defense**

The Soviet Union has a nuclear-armed ABM system deployed around Moscow, as permitted under the 1972 ABM Treaty. The Soviets have also made steady progress in constructing large phased-array radars (LPARs) that could become links in a territorial ABM system. Three new LPARs under construction will provide almost total detection and tracking coverage of the western USSR. Another such LPAR is being constructed at Krasnoyarsk, in violation of the ABM treaty. The Soviets also have a vigorous directed-energy research and development effort that could lead to a ground-based ballistic missile defense (BMD) capability. Collectively, Soviet ABM and

ABM related developments may provide them with a capability for rapid deployment of a widespread ABM network. In addition, to complement their BMD efforts, the Soviets have developed an extensive TW/AA capability based on launch detection satellites and over-the-horizon and phased-array radars. The United States has no existing system that violates the ABM Treaty. Figure IV-7 compares US and Soviet BMD programs.

Advances in defensive technology based on research supported by all administrations over the past two decades justify the current research efforts of the Strategic Defense Initiative (SDI). Under the SDI, the United States is conducting an intensive research effort focused on advanced defensive technologies capable of defending effectively against ballistic missiles. A number of concepts, involving a wide range of technologies, are being examined. This research program is not a departure from the fundamental US policy of deterrence. The SDI is addressing the protection of both civilian and military assets. The research seeks to exploit inevitable technological

evolution and is a necessary, prudent response to active Soviet research and development activities in similar ballistic missile defense. Initial research indicates a multilayered defense, capable of engaging enemy missiles and RVs in all stages of flight (see Figure IV-8) may be feasible. The Secretary of Defense has approved the Defense Acquisition Board recommendation to move six SDI technologies comprising a possible first phase of a strategic ballistic missile defense system into demonstration and validation. Also, to extend protection against nuclear, chemical, biological, and conventional attacks in theater by shorter-range ballistic missiles, the SDI is also examining technologies with potential against these systems.

The US SDI is a research program, conducted in accordance with the terms of the ABM Treaty, to determine whether it is possible to develop an ABM system that will meet the criteria of survivability and military and cost effectiveness. This program is a prudent technological hedge against a possible Soviet breakout from the ABM Treaty

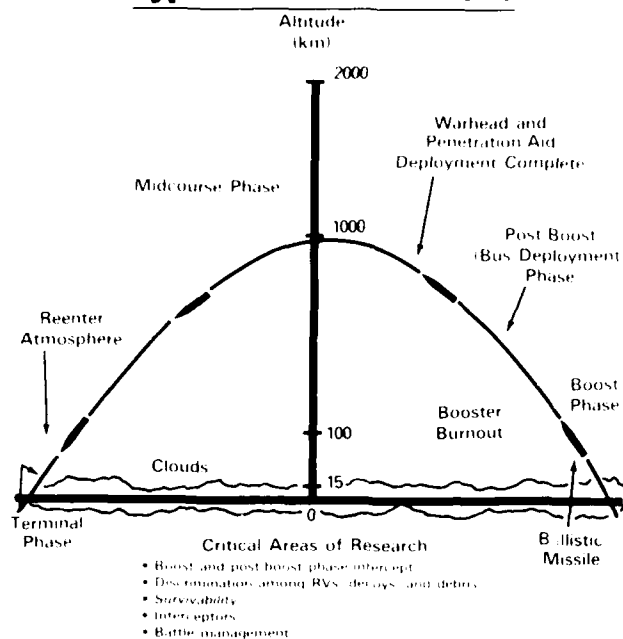
## **Defense Against Ballistic Missiles**

US	Soviet
<b>ABM DEFENSE</b> <ul style="list-style-type: none"> <li>• None since SAFEGUARD phased out in 1976</li> <li>• Possible option for early deployment of terminal defense—hedge against USSR breakout</li> <li>• Strategic Defense Initiative (1983)—research to determine technical feasibility of multilayered BMD</li> </ul>	<b>ABM DEFENSE</b> <ul style="list-style-type: none"> <li>• Operational system at Moscow since 1968</li> <li>• Upgrade to the Moscow system fully operational by 1989-90 <ul style="list-style-type: none"> <li>• New multifunction phased-array radar</li> <li>• Endo- and exo-atmospheric interceptors</li> </ul> </li> <li>• New early warning, acquisition and tracking radar network under construction</li> <li>• Systems available for rapid, widespread deployments beyond ABM Treaty</li> </ul>
<b>DIRECTED ENERGY WEAPONS</b> <ul style="list-style-type: none"> <li>• Research on Candidate technology under Strategic Defense Initiative</li> </ul>	<b>DIRECTED ENERGY WEAPONS</b> <ul style="list-style-type: none"> <li>• Vigorous R&amp;D with possible BMD applications in late 1990s</li> <li>• Program identified for laser BMD</li> <li>• Charged Particle Beam</li> <li>• Radio Frequency Weapons</li> </ul>
<b>TACTICAL WARNING AND ATTACK ASSESSMENT</b> <ul style="list-style-type: none"> <li>• 2 long-range detection and tracking radars and a phased-array radar (BMEWS)</li> <li>• Phased-array warning system (PAVE PAWS)</li> <li>• Perimeter acquisition radar attack characterization system (PARCS)</li> <li>• Satellites</li> <li>• COBRA DANE</li> <li>• GPS/NDS</li> </ul>	<b>TACTICAL WARNING AND ATTACK ASSESSMENT</b> <ul style="list-style-type: none"> <li>• Over-the-horizon radars</li> <li>• Phased-array radars</li> <li>• Launch detection satellites</li> </ul>

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FIGURE IV-7

## Phases of a Typical Ballistic Missile



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FIGURE IV-8

and holds the promise of a more balanced way to deter aggression, strengthen stability, and increase US and allied security. The US Space Command is responsible for US strategic BMD planning. The Joint Chiefs of Staff have defined Phase I of a strategic BMD operational requirement, and USSPACECOM will soon be developing a BMD concept of operations. In the 1960s, there were no credible concepts for boost-phase intercept. Today, multiple approaches are being investigated, based on both directed-energy and kinetic-energy concepts. Midcourse intercept was hampered in the 1960s by a lack of credible approaches for decoy discrimination, unmanageable signal and data processing loads, the cost per intercept, and the undesirable collateral effects of nuclear weapons used for the interceptor warheads. Multispectral sensing of discriminants, birth-to-death tracking in midcourse, increased interceptor reach, and small hit-to-kill vehicles that promise inexpensive interceptors all appear to offer capabilities that may overcome the earlier limitations in midcourse.

In the 1960s, an inability to discriminate between penetration aids (penaids) and warheads at high altitudes and limited interceptor performance resulted in very small defended areas for each terminal defense site. The offense thus had unacceptable leverage

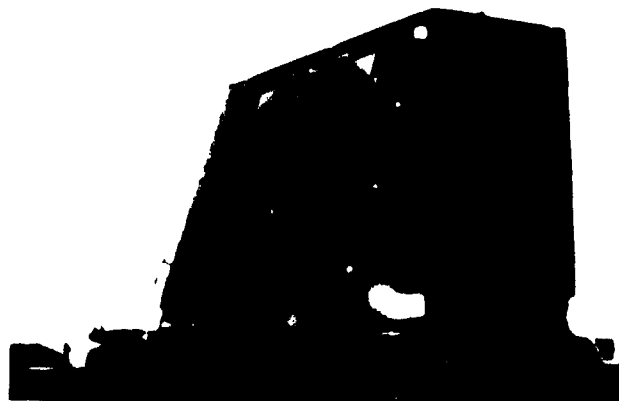
over the number of interceptors needed. Today, technology provides the potential to discriminate at high altitudes, and improved interceptor technologies should allow intercepts at these higher altitudes. When these improvements are coupled with the potential for boost-phase and midcourse intercepts to disrupt pattern attacks, robust terminal defenses seem attainable.

Finally, 1960s' technology in computer hardware, software, and signal processing was incapable of supporting battle management of multitiered defense. The rapid improvement in these technologies should permit production of the complex C<sup>2</sup> systems needed.

Although the ABM Treaty allows one ABM deployment area, the United States deactivated its ABM system at Grand Forks, ND, in the 1970s (Figure IV-8). If reinstituted, an active US defense will require a survivable integrated TW/AA system providing, in addition to detection and warning, discrimination between weapons and nonthreats and a battle-management capability.

The current space-based early warning system relies on sensors aboard satellites. These satellites cover most Soviet SLBM and all ICBM launch areas. Satellite survivability is being improved.

Ground-based radars, such as PAVE PAWS, Perimeter Acquisition Radar Attack Characterization System (PARCS), Ballistic Missile Early Warning System (BMEWS), and COBRA DANE, confirm satellite warning of ICBM attacks from the north, and SLBM attacks from normal Soviet submarine operating areas. Two recently completed southern PAVE PAWS sites now provide radar coverage of likely southern SLBM approach routes.



COBRA DANE PHASED ARRAY RADAR

PARCS provides warning and assessment of SLBM attack against CONUS and southern Canada.

Since BMEWS was becoming increasingly difficult to maintain and support because of obsolete equipment, the BMEWS radar at Thule, Greenland, was upgraded with a two-direction, phased-array system, and the radar at Fylingdales, United Kingdom, is being upgraded with a three-direction phased-array system. These upgrades improve range resolution, are better able to count incoming vehicles, and provide more accurate attack assessment.

The above improvements will provide a warning capability against the projected Soviet threat. In response to the increasingly time-stressed nature of the aerospace threat, the US goal for warning systems is a single assessment and notification of imminent or actual attack on the United States by evaluating integrated information from strategic intelligence sources and ballistic missile, atmospheric, and space warning sensors.

Other systems contribute unique capabilities to monitor Soviet nuclear forces. Strategic airborne reconnaissance aircraft carry a variety of sensors to detect ground and air activities. Navy P-3 maritime patrol aircraft, submarines, and surface ships, many with towed-array sensors are the key to tracking Soviet ballistic missile submarines.

## **Air Defense**

The Soviets place great emphasis on homeland air defense and continually upgrade their capabilities. The Soviets have approximately 2,250 aircraft that have a primary mission of strategic defense. Deployment continues for the FOXHOUND, the first Soviet fighter-interceptor with full lookdown-shootdown and multiple-target engagement capabilities. Operational deployment of the FLANKER, another new lookdown-shootdown-capable fighter-interceptor, occurred in 1986. Deployment to tactical forces of the new FULCRUM has been under way since 1984, although none has yet deployed with a primary mission of strategic defense.

The Soviets have deployed over 8,500 launchers for five strategic surface-to-air (SAM) missile systems. Nearly 4,500 launch vehicles for seven tactical SAM systems are stationed in the USSR. At least six other systems are now in research and development. The SA-10 is estimated to be effective against small, low-altitude targets. The SA-12a/GLADIATOR is being deployed as a sophisticated, mobile, long-range

tactical SAM and antitactical ballistic missile system. The longer-range SA-X-12b/GIANT, still under development, is assessed to have good capability against short-range ballistic missiles (SRBMs) and some potential capability against medium-range ballistic missiles (MRBMs). This system in particular, and possibly the SA-10 as well, may have potential capability against some types of strategic ballistic missiles.

For surveillance of their airspace, the Soviets operate the MOSS AWACS aircraft, and have over 10,000 search and track radars at over 1,200 ground sites. When deployed in numbers, MAINSTAY, the next generation AWACS, will significantly improve forward air defense capabilities, especially when it operates with lookdown-shootdown-capable aircraft such as the FOXHOUND, FULCRUM, and FLANKER. The Soviets are also constructing a over-the-horizon backscatter (OTH-B) radar similar to the US OTH-B radar. With these improvements, Soviet air defenses will continue to pose a major challenge for the US bomber force.

The United States and Canada share North American air defense responsibilities under the provisions of the North American Air Defense Agreement. Both nations assign forces to the North American Aerospace Defense Command (NORAD).

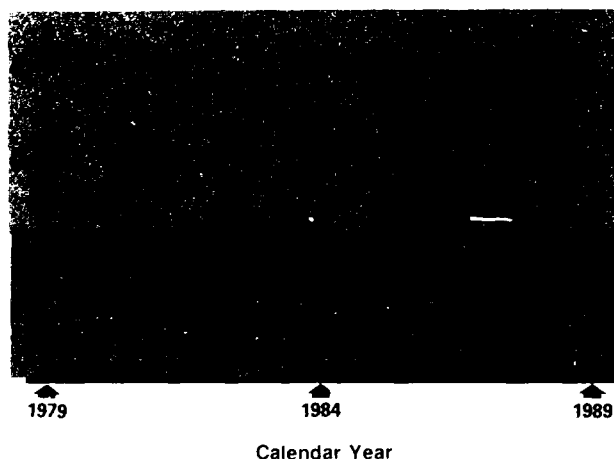
Current North American air defenses are composed of surveillance radars, AWACS aircraft, interceptor aircraft, and an integrated C<sup>2</sup> system. Deployment of North Warning System (NWS) and OTH-B radars will improve detection capability against airbreathing threats. The effectiveness of OTH-B in detecting cruise missiles is promising. OTH-B radars can provide surveillance of potential attack routes at ranges between 500 to 1,800 nautical miles from the radar. AWACS patrols provide added coverage until the present Distant Early Warning (DEW) Line radars are replaced by the NWS. The NWS searching north and OTH-B radars searching east, west, and south will provide a capability for tactical warning at ranges allowing increased response time against aircraft and cruise missiles.

Peacetime surveillance and control of continental airspace has been strengthened by integrating selected civilian and military radar sites into the Joint Surveillance System (JSS), which feeds data into the CONUS and Alaskan Regional Operations Control Centers. This system provides air defense C<sup>2</sup> during the initial stages of an attack. OTH-B, NWS, and the

Navy's ROTHF will also provide warning data that will complement JSS.

Better interceptor aircraft are complementing improvements in surveillance capability. USAF active duty air defense forces have been equipped with the F-15 aircraft. US F-106 and F-4 aircraft are being replaced by more capable F-16 air defense aircraft. Canada's CF-101 interceptors have been replaced with CF-18 aircraft. The addition of the advanced medium-range air-to-air missile (AMRAAM) will improve the ability of air defense aircraft to engage low-altitude aircraft in a lookdown-shootdown ECM environment. Further, the AMRAAM will allow F-15s and F-16s to engage multiple targets simultaneously. Figure IV-9 illustrates the modernization of the US and Soviet interceptor aircraft inventories.

### Air Defense Interceptor Aircraft Deployments



As of 30 September 1987

FIGURE IV-9

### Space Defense

The Soviet Union has the world's only operational antisatellite (ASAT) system. The Soviets' ASAT system is capable of attacking satellites in low-earth orbits. Additionally, GALOSH ABM interceptors have an inherent ASAT capability when used in a direct ascent mode. Two ground sites at Sary Shagan are assessed to have lasers capable of damaging low orbiting satellites and, depending on US sensor characteristics, blinding or jamming sensors of high altitude satellites. Vigorous Soviet research and development efforts in ground-based high-energy lasers

and space-based directed-energy technology have potential ASAT applications.

### Other Defense Measures

Both the United States and the Soviet Union have given high priority to hardening strategic systems, such as missile silos and essential C<sup>2</sup> systems, against nuclear detonations. The Soviet Union has significantly improved its strategic capability by dispersing critical facilities, hardening structures, and developing mobile systems. With few exceptions, the United States has not hardened economic or government facilities except those actually involved in strategic intelligence and C<sup>2</sup> operations.

The Soviet Union places far more emphasis on civil defense (CD) than does the United States. Viewing CD as an integral part of their strategic posture, the Soviets have prepared a nationwide system of wartime management to mobilize and fully integrate the military, Communist Party, government, and economic components of the war effort. The Soviet wartime management system is intended to support leadership continuity at all levels, mobilization of human and material resources, continuity of key economic functions, and post-attack recovery operations. All are deemed vital to Soviet plans for prosecuting a war to a successful conclusion and for post-war recovery.

The Soviet program to ensure leadership continuity has involved the construction of deep-underground facilities, near-surface bunkers, and smaller relocation sites. The Soviets have, in addition, made considerable progress in delineating, and coordinating the responsibilities of leadership elements at all levels within the wartime management system and in preparing the system to make a rapid transition to its wartime structure and functions. The highly structured, bureaucratic, and authoritarian nature of the Soviet system, widely seen as hindering the USSR's peacetime performance, would greatly facilitate management of the nation in wartime.

### Strategic Defense Summary Assessment

Figure IV-10 illustrates the key features of the US and Soviet strategic defense force postures.

### NONSTRATEGIC NUCLEAR FORCES

In the broad spectrum of nuclear force options to deter aggression and defend its interests should deterrence fail, the US NSNF provides an escalatory

## **Strategic Defense Summary**

US	Soviet
<b>BALLISTIC MISSILE DEFENSE</b> <ul style="list-style-type: none"> <li>• Dismantled</li> <li>• 1983 Strategic Defense Initiative (Research)</li> </ul>	<b>BALLISTIC MISSILE DEFENSE</b> <ul style="list-style-type: none"> <li>• Deployed around Moscow—within ABM Treaty</li> <li>• Systems available for potential breakout</li> </ul>
<b>AIR DEFENSE</b> <ul style="list-style-type: none"> <li>• SAMs phased out in 1975</li> <li>• 300 Interceptors</li> <li>• 100 Radars</li> </ul>	<b>AIR DEFENSE</b> <ul style="list-style-type: none"> <li>• 8,560 SAM launchers</li> <li>• 2,250 Interceptors</li> <li>• 10,000 Radars</li> </ul>
<b>SPACE DEFENSE</b> <ul style="list-style-type: none"> <li>• Early interceptor dismantled</li> <li>• F-15 launched ASAT in development</li> </ul>	<b>SPACE DEFENSE</b> <ul style="list-style-type: none"> <li>• Co-orbital ASAT interceptor operational</li> <li>• Potential use of ABM as ASAT</li> <li>• Potential ground-based lasers</li> <li>• Potential electronic warfare threat</li> </ul>
<b>CIVIL DEFENSE</b> <ul style="list-style-type: none"> <li>• Limited program</li> </ul>	<b>CIVIL DEFENSE</b> <ul style="list-style-type: none"> <li>• Strong program</li> </ul>
<b>RELIANCE ON RETALIATORY CAPABILITY</b> <ul style="list-style-type: none"> <li>• Effective tactical warning and attack assessment</li> <li>• Survivable TRIAD</li> </ul>	<b>RELIANCE ON DAMAGE LIMITATION AND OFFENSIVE CAPABILITY</b> <ul style="list-style-type: none"> <li>• Effective tactical warning and attack assessment</li> <li>• Active defenses</li> <li>• Passive defenses</li> <li>• Survivable offensive capability</li> </ul>

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**FIGURE IV-10**

or retaliatory response below the level of strategic nuclear forces. NSNF consist of land-based systems for battlefield support and deeper strikes, and sea-based systems for land strike and antiship, antisubmarine, and antiair warfare.

NSNF support conventional forces by providing a major deterrent to conventional, theater nuclear, and chemical attack, and are essential to a strategy of flexible response. NSNF provide a range of employment options that create uncertainty for potential aggressors concerning US and allied response. NSNF could deny the enemy sanctuary to mass forces behind the immediate battle zone and break up the momentum of an offensive.

### **Intermediate-Range Nuclear Forces**

In December 1987, the US and the Soviet Union signed an INF Treaty by which they will eliminate all intermediate and shorter range missiles and related support structures and equipment. That includes ground launched ballistic and cruise missiles within

the range of 500 to 5500 kilometers. Existing classes of missiles to be eliminated by the Parties are specified by type in the Treaty text, i.e., Pershing II, Pershing IA, BGM 109G (cruise missile), SS-20, SS-5, SS-4, SSC-X-4, SS-12, and SS-23.

The INF treaty will affect the global military environment in several ways. It will reduce the Soviet's capability to hold targets at risk throughout the full depth of NATO territory without resorting to strategic nuclear weapons. It will reduce the Soviet INF missile threat to US forces in the Far East. It will also, however, remove NATO's capability to strike time-urgent targets in the Soviet Union with land-based theater weapons. Chapter VI contains a further discussion of the INF treaty and other arms control negotiations.

The Joint Chiefs of Staff have recommended certain force adjustments and the continuation of conventional and theater nuclear force modernization measures pre-dating the INF Treaty. These recom-

mentations have considered the impact of defense funding constraints, the need for close coordination with US allies, and the potential impact of further arms control agreements.

Included among the US nuclear force adjustments under consideration are expanded NATO roles for DCA, and continued emphasis on airfield, aircraft, and weapon survivability. Previously planned modernization initiatives include both a follow-on to the Lance missile and a tactical air-to-surface missile. Increased production of newer artillery-fired atomic projectiles also continues to be a major modernization goal for increasing NATO's deterrent posture.

Full implementation of the INF treaty will highlight the conventional force imbalance existing in Europe. A major goal in further arms control talks must be to achieve greater parity in these conventional forces, where the WP enjoys a numerical advantage in nearly every major area, as discussed in Chapter III.

#### Dual-Capable Aircraft

Dual-capable aircraft (DCA) are land- and carrier-based aircraft capable of delivering both conventional and nuclear weapons. DCA make up the preponderance of INF systems capable of delivering nuclear weapons beyond the immediate battlefield. DCA were not limited by the recently signed INF treaty.

The Warsaw Pact has a numerical advantage in INF aircraft. Changes for the next few years involve the introduction of newer, more capable systems. As with NATO systems, most Warsaw Pact INF aircraft are limited to SRINF-equivalent ranges. Only Soviet BACKFIRE, BLINDER, and BADGER bombers and NATO's TORNADO and F-111 aircraft are capable of routine operation at longer ranges.

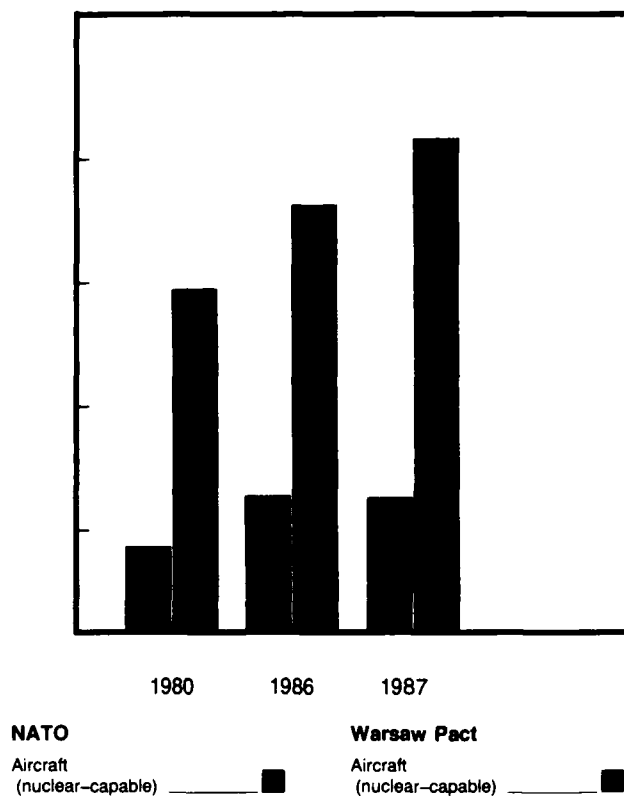
Because of possible attrition during conventional operations, and the fact that not all INF-range aircraft are committed to the nuclear role, the actual number of DCA available for nuclear operations would depend on the nature and sequence of an attack.

#### Land-Based Aircraft

Figure IV-11 shows how both the Warsaw Pact and NATO rely heavily on DCA, and the significant numerical advantage held by the Warsaw Pact. The F-111 and TORNADO are currently the most capable INF aircraft available to NATO with the ability to penetrate Soviet defenses at low altitude, day or night, in any weather. NATO will continue to make qualitative and quantitative improvements in existing

### NATO-Warsaw Pact INF Aircraft

#### Europe



As of 30 September 1987

FIGURE IV-11

aircraft, such as the F-16, F-111, and TORNADO. The addition of the F-15E dual-role fighter to the US inventory in the early 1990s will significantly improve all-weather DCA capability. Other US DCA modernization initiatives include modernizing the tactical nuclear bomb stockpile with enhanced safety and security features to increase reliability, and research into a standoff tactical air-to-surface missile (TASM) to increase the effective range of DCA.

Maritime patrol aircraft (MPA) such as the P-3 ORION are long-range, land-based aircraft capable of delivering conventional, ASW, and antiship weapons and the B-57 nuclear depth bomb. US MPA provide coverage over large areas of ocean and work in concert with carrier-based, submarine, and surface naval forces to locate and track potentially hostile maritime forces. Soviet land-based MPA such as the BE-12 MAIL twin turboprop amphibian, the IL-38 MAY (a P-3 lookalike), and the TU-142 BEAR-F,

perform similar functions directed against US naval forces.

### Sea-Based Aircraft

Carrier-based DCA (A-6, A-7, F/A-18, S-3) perform both strike and ASW nuclear missions. They are important elements of a flexible US nuclear land-attack, antiship, and ASW capability, holding at risk nuclear targets not easily accessible from land bases.

### Short-Range Nuclear Forces

In the past, NATO had a clear advantage over the Warsaw Pact in the number of deployed short-range nuclear force (SNF) missiles, rockets, and artillery capable of striking targets in the immediate battle-field area (Figure IV-12). This advantage was due primarily to the large NATO inventory of dual-capable 155 millimeter (mm) howitzers. The Soviets now hold the advantage. They have fielded nuclear-capable 152mm guns/howitzers, 203mm guns, and 240mm self-propelled mortars; also, most of their older 152mm howitzers are considered to be nuclear-capable. These systems are complemented by a new nuclear-capable ballistic missile, the SS-21, which is replacing the FROG-7. Soviet deployments of these SNF weapons significantly increase their battlefield nuclear capability.

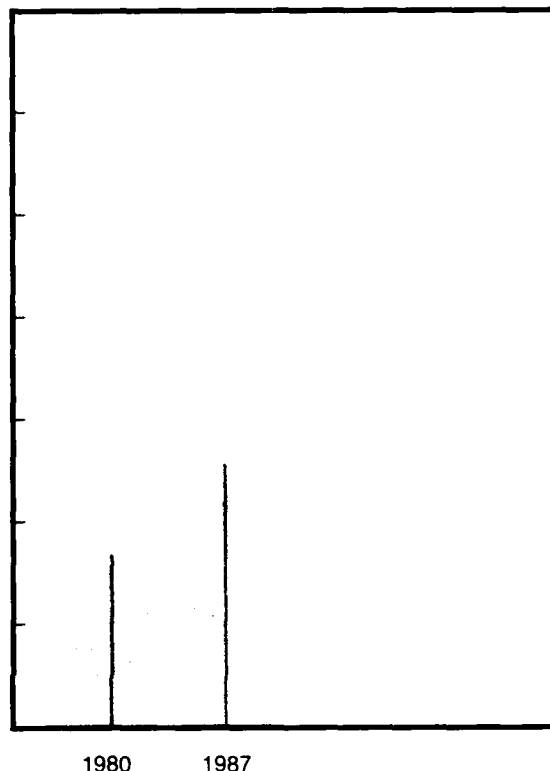


155MM HOWITZER (M109)

## NATO-Warsaw Pact Short-Range Nuclear Forces

### Europe

Launchers/Artillery Tubes Only



NATO\*



Warsaw Pact\*\*



\*US LANCE 8-inch, 155mm  
Non-US NATO LANCE,  
HONEST JOHN, 8-inch  
155mm

\*\*Soviet SCUD, SS-21, FROG,  
203mm, 240mm,  
152mm systems  
Non-Soviet Warsaw Pact  
SCUD, SS-21, FROG, 152mm

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FIGURE IV-12

The United States is also engaged in programs to upgrade its SNF systems. This modernization effort is required to replace aging, less reliable warheads and provide weapons that can more effectively counter the Warsaw Pact threat.

Modernized artillery-fired atomic projectiles (AFAP) use improved technology, resulting in significantly increased effectiveness (because of better fuzing, yields, and accuracy), range, higher relia-



bility, improved responsiveness, and enhanced safety and C<sup>2</sup>.

Compared to other SNF systems, the large number of 155mm howitzers in Europe increases by a factor of five the number of potential SNF delivery systems with which Soviet planners must contend. The W82 modernized 155mm AFAP is in development. This weapon is designed to replace the W48, which is nearing the end of its useful life. The W82 offers the advantages of modern AFAPs mentioned above. Until sufficient W82 are fielded, a significant number of the less-capable, first generation 155mm AFAPs will be required. Removal of congressional ceilings on AFAP production will be required before full deterrent advantage can be taken of this system.

The LANCE, with its 115-km range, remains NATO's longest range SNF system. The LANCE provides the ground commander an important capability to attack C<sup>2</sup> facilities, airfields, armored formations, air defense sites, and troop concentrations.

### **Sea-Based Nuclear Forces**

Sea-based nuclear forces consist of strike, antiship, air defense, and antisubmarine warfare systems. The TLAM/N significantly enhances the threat to inland targets by providing generally increased range over carrier aircraft and dispersing nuclear strike assets among a large number of naval platforms.

In addition to TLAM/N, various naval forces are equipped with TERRIER nuclear anti-air warfare (AAW) missiles, submarine rockets (SUBROC), anti-submarine rockets (ASROC), and air-delivered weapons.

The Soviet Navy maintains an extensive sea-based nonstrategic nuclear force comprising both antisurface warfare (ASUW) and ASW systems. The Soviets maintain an inventory of nuclear-armed air and surface missiles, as well as torpedoes and depth bombs. The extensive array of naval cruise missiles includes the older SS-N-3 and the newer SS-N-19 and SS-N-22 systems. Nuclear-armed torpedoes include the Type 65 and ET-80. Almost all major surface combatants (about 290), all submarines (about 340), as well as a few other combatants (some 31) are armed with at least one, or a mix of, nuclear weapon systems.

### **Other Nuclear Forces**

The UK maintains an SLBM force consisting of 4 SSBNs, each of which carries 16 POLARIS A-3 missiles. The UK plans to purchase the US TRIDENT system to replace its POLARIS systems in the 1990s. The UK also maintains a force of DCA capable of employing nuclear bombs. France is not part of the integrated NATO military structure but maintains an independent nuclear capability.

### **NSNF Command and Control**

#### **Soviet Command and Control and Communications**

The Soviets have placed much emphasis on C<sup>3</sup> for NSNF military operations occurring on the periphery of the Soviet Union. In addition to the control of nuclear strike operations against North America, the Soviets have paid the greatest attention to the problems of conducting either nuclear or conventional operations in the European and Far Eastern theaters. Since 1978, in particular, the Soviets have formed permanent peacetime high commands for controlling ground, air, air defense, and naval forces in each of the four principal theaters of the Soviet periphery. These high commands, acting as regional extensions of the Soviet General Staff, would be capable of conducting largely independent operations with forces in place. As a whole, Soviet C<sup>3</sup> capabilities for theater war are highly survivable, redundant, and flexible, with C<sup>3</sup> networks for long-range intermediate nuclear forces tightly integrated with those for strategic forces.

#### **US Command and Control**

The NSNF must provide positive measures for safety, security, and control of nuclear weapons and the assured C<sup>2</sup> of our theater nuclear forces through the full conflict spectrum. Our NSNF C<sup>2</sup> systems have been improved in the areas of communications reliability and security. Several upgrades are under way to enhance the durability of communications before the mid-1990s. These programs are designed to provide for continuity of operations and command and required communications connectivity after nuclear exchanges. In addition, new programs are being developed to provide for the timely management of the force and its mission up to and through the postattack period.

## CHAPTER V. CONVENTIONAL FORCES

### INTRODUCTION

This chapter describes US general purpose forces and highlights essential conventional force programs and improvements. It discusses force deployment, employment, and support, and reviews improvements in Service interoperability, planning and programming, force development, doctrine, and joint warfighting concepts.

### Role of the Joint Chiefs of Staff

Since 1947, US Military Forces worldwide have been commanded under the joint system independent of the Services. An amendment to title 10, US Code, enacted in 1986, focused increased attention by the Chairman, Joint Chiefs of Staff (CJCS) and the Joint Chiefs of Staff (JCS) on formulating strategy and on contingency planning. That legislation was also intended to improve the military advice provided to the President, the National Security Council (NSC), and the Secretary of Defense. The role of the Chairman, Joint Chiefs of Staff, has been modified to include basic functions previously assigned to the JCS. CJCS functions include the following: (1) serve as the principal military adviser to the President, the Secretary of Defense, and the NSC; (2) assist the President and the Secretary of Defense in providing for the strategic direction of the Armed Forces; (3) prepare strategic plans; (4) perform net assessments; (5) provide for the preparation and review of contingency plans; (6) prepare joint logistic and mobility plans to support contingency plans; (7) advise the Secretary of Defense on critical deficiencies and strengths in force capabilities; (8) establish and maintain a uniform system for evaluating the preparedness of each unified and specified command; (9) advise the Secretary of Defense on the priorities of the requirements identified by the commanders of the unified and specified commands; (10) advise the Secretary of Defense on the extent to which military department and other DOD component program recommendations and budget proposals conform with the priorities established in strategic plans and for the requirements of the unified and specified commands; (11) submit to the Secretary of Defense alternate program recommendations and budget proposals to achieve greater conformance to the priorities established in strategic plans and for the requirements of the unified and specified commands; (12) assess military requirements for defense acquisition programs; (13) develop doctrine for the joint employment of the Armed Forces; (14)

formulate policies for the joint training of the Armed Forces; and (15) formulate policies for coordinating the military education and training of members of the Armed Forces. The operational chain of command continues to pass from the President to the Secretary of Defense to the CINCs. The Chairman has no command authority, but as directed by the President provides a channel of communication between the NCA and the CINCs and oversees the activities of the unified and specified commands.

### COMPONENT FORCES

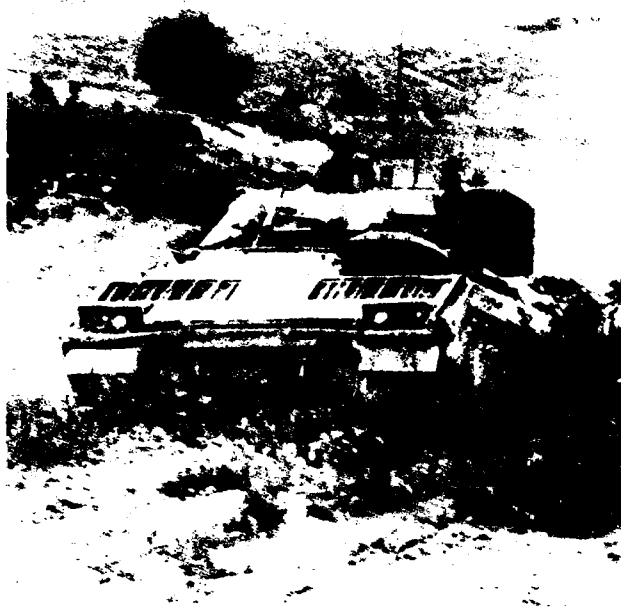
Although direct confrontation with the Soviets remains the most dangerous threat to US interests, the most likely conflict will be of a low-intensity nature based on Soviet exploitation of regional conflicts and instabilities. Therefore, the United States must maintain a balance of land, air, and naval conventional forces, including special operations forces (SOF), which permits it to operate successfully and to control escalation across the spectrum of warfare from LIC to global war.

### Land Forces

US strategic military objectives are deterrence and, should deterrence fail, cessation of hostilities on terms favorable to the United States and its allies and friends. Our ability to achieve these objectives depends on fielding capabilities to meet the Soviet threat. Because the pivotal element of Soviet power remains the Red Army, US and allied capabilities for



SOLDIERS IN THE FIELD



**M-2 BRADLEY**

detering and, if necessary, defeating Soviet aggression will continue to depend heavily on dictating the outcome of the land battle in Europe.

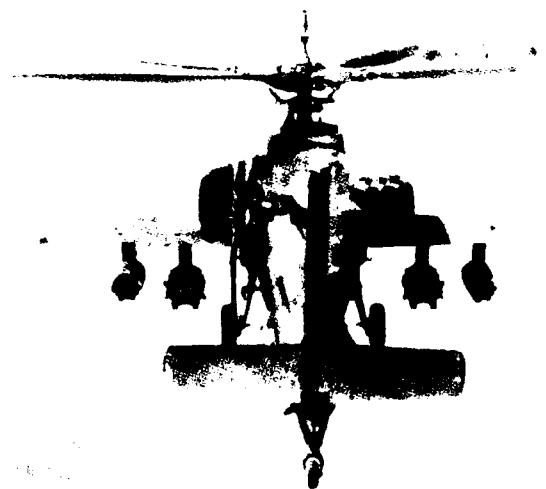
While US preparedness to reinforce NATO occupies a great deal of Army attention, US military strategy also recognizes the global threat posed by the Soviet Union, its surrogates, and other nations whose aims are contrary to the interests of the United States. Our nation remains threatened across the spectrum of conflict; we must be prepared for a very intense, but improbable, global conflict with the Soviet Bloc, while at the same time improving our capabilities to contend with small-scale, though far more likely, conflicts that range from terrorism to insurgency.

Although superior mobility and operational readiness have provided the US military with a force projection capability superior to that of the Soviet Union, the Soviets have increased their power projection capabilities sharply over the last 10 years. To improve US capabilities for projecting land forces around the world, we have established as our force objectives a fully modernized, sustainable, deployable, and ready 28-division force manned with quality people. These objectives have led the Army to create rapidly deployable infantry divisions, and to expand our SOF, as well as the requisite tactical and strategic lift capabilities. In short, we are continuing to improve our conventional force capabilities to respond to the spectrum of global threats that face us, and we are doing so as rapidly as resource constraints will allow.

Soviet and Warsaw Pact forces are continuing an unprecedented modernization of their already massive standing armies — expanding capabilities in every function of ground combat with new tanks, infantry fighting vehicles, artillery, helicopters, command and control systems, and service support. The Soviet Theater Strategic Operations Doctrine provides cohesion and direction to this modernization, and seeks new capabilities for rapidly defeating NATO forces. Soviet doctrine would deny the initiative to NATO, and — in an attempt to overcome the nuclear potential of "flexible response" — seek a paralyzing strike to the strategic depth of NATO defenses.

To counter this threat, NATO depends increasingly on a joint and combined capability centering on land and air power. US and allied land forces must be supported by the air power of all the Services and our allies. If fully supported, the Army's Airland Battle doctrine can ensure an ability to thwart the initial Warsaw Pact attack, while simultaneously disrupting and destroying follow-on Pact forces without resorting to nuclear weapons. However, in the future, US land forces will require an even more potent capability to execute the vigorous forward defense of critical theaters without immediate pressure to employ nuclear weapons.

While the United States has always looked to conventional improvements as a means for raising the nuclear threshold, recent arms negotiations with the Soviet Union underline the importance of redressing



**AH-64 APACHE ATTACK HELICOPTER**

the conventional imbalance. As a result, our future ability to accomplish required deterrent and defensive objectives will increase dependence on modernizing the conventional leg of the total force.

Winning in war will remain a function of sound doctrine, well-trained soldiers, and qualitatively superior systems and technologies; only this combination can balance the enormous quantitative advantage now enjoyed by the Soviet Union. However, US ground force modernization rates have not been competitive with Soviet rates over the last decade, and the US ability to execute strategy and doctrine successfully rests with the ability to regain the qualitative advantage across the breadth of our general purpose forces. The Army's strategy to overcome Soviet advantages is to continue to invest in the modernization of equipment and systems for close operations, to accelerate the fielding of a robust deep operations capability, and to invest in research and development to exploit high leverage advanced technologies. Implicit in this strategy is the acquisition of appropriate command and control and sustaining capabilities. Under the current administration, the Army has completed approximately one-third of its modernization effort for heavy forces.

With constrained resources the Army has nevertheless achieved a balance of combat and combat support forces within the Active and Reserve components. This balanced force has been designed to optimize — within the aforementioned resource constraints — deterrence across the spectrum of conflict, and is constantly being improved. However, without additional resources neither the Army's deterrent nor war winning capabilities will reach their requisite potential.

The Army shortfall areas of concern are equipment fielding schedules and the adequacy of our available CS/CSS capabilities. Because of European troop strength ceilings, Army units are less than fully manned in Europe. While 97 percent of the personnel shortfall can be filled in the event of war, and while funds are programmed to purchase mission essential equipment to raise selected early deploying CS/CSS units to minimum combat ready status, these units are not fully ready today. These programs should be completed if combat forces are to receive the support and sustainment capabilities required by US strategy and doctrine.

Additionally, the Army needs to achieve equipment readiness improvements in all deploying high priority

support units. The Army recognizes the critical need to correct existing shortfalls in CS/CSS units and continues its aggressive programs to improve its readiness posture. However, without additional TOA, serious shortfalls will persist.

A decade of rapid modernization of Soviet armored forces has contributed to the conventional imbalance. For example, the Soviets have recently incorporated revolutionary armor-protection technology into their tank forces. Against such forces, US and NATO armies remain equipped primarily with anti-tank weapons and armored systems representing 1960s' technology. Despite US efforts, the bulk of NATO's antitank guided missiles and tank-fired munitions still lack adequate kill capability against Soviet improved systems. A continuing need exists for new antiarmor systems capable of deterring and defeating this increased threat. A number of antiarmor initiatives are being undertaken by the Army, chief among which is the Antiarmor Weapons Systems-Medium (AAWS-M). This system is presently under development with production scheduled for the mid-1990s. When fielded, AAWS-M will give the Army an effective antitank weapon of modest size and weight capable of defeating the latest Soviet armor.

Until then, the Army will continue to field a number of other new and modernized ground force systems designed to counter the Warsaw Pact armor threat. The M-1A1 ABRAMS main battle tank, with its 120mm gun, was approved for full production and is being fielded as reflected in Figure V-1. Accompanying the M1A1 is the product-improved M60A3 main battle tank. In addition, Army is fielding the M2/M3 BRADLEY fighting vehicle. Based on the results of survivability improvements, the more capable M2/M3 BRADLEY vehicle will play an important supporting role for the armor and infantry units dedicated to defeating Soviet armor in the close battle. Operational tests have validated the effectiveness of the ABRAMS-BRADLEY tactical team in countering the Soviet threat. The Armored Family of Vehicles (AFV) will assure US competitiveness with comparable Soviet armored vehicles well into the 21st century.

Fire support systems that provide indirect support to armored and infantry maneuver units and provide the commander the capability to deliver fires to the depths of the battlefield are also critical to the outcome of the close battle. Historically, the Warsaw Pact nations have achieved longer ranges and more rapid fire than their NATO counterparts.



### M2/M3 BRADLEY IN ACTION

To address this imbalance, the Army is fielding the MLRS, capable of firing the sense and destroy armor munition SADARM. This system will provide the ground force commander a significant counterbattery capability. To expand the battlefield even deeper, and to threaten the enemy's follow-on forces, the Army Tactical Missile System (ATACMS) is also under full development.

In order to strike deep, the commander must be able to see into the enemy's territory. The Army and the Air Force are developing the Joint Surveillance and Target Attack Radar System (JSTARS). The criticality of capabilities for timely detection and real-time attack of targets cannot be overemphasized. To this end, the Army is replacing the TACFIRE system with the Advanced Field Artillery Tactical Data System (AFATDS), which is capable of rapidly managing greater amounts of intelligence from different sources.

Coordination of the Army's fires will require communications systems that provide rapid distribution of firing data, thereby enabling ground force commanders to mass fires on priority targets. AFATDS will provide such a capability. When combined with the battlefield area communications systems, MSE, and combat radio nets provided by SINCGARS, commanders will have a network to support the massing of fires and the command and control required to execute the AirLand Battle.

Remotely piloted vehicles (RPVs), are being de-

## Ground Force Systems Modernization

<b><u>System</u></b>	<b><u>Description</u></b>	<b><u>Status</u></b>
ABRAMS Tank	Main battle tank	4,542 of 7,467 fielded
M60A3 Tank	Main battle tank product improvement program	4,810 of 5,400 fielded
BRADLEY Fighting Vehicles	Infantry and cavalry fighting vehicles	3,237 of 6,882 fielded
UH-60 BLACKHAWK	Utility helicopter	838 of 1,107 fielded
AH-64 APACHE	Advanced attack helicopter	274 of 675 fielded.
PATRIOT	High and medium altitude surface-to-air missile	52 of 108 batteries fielded
Multiple-Launch Rocket System	Self-propelled, tracked multiple-rocket launcher/loader	280 of 681 fielded
Army-TACMS	Conventional ballistic missile	Full-scale development
Precision Guided Artillery Munitions and Submunitions	Family of PGMs	Range from advanced to full-scale development
JSTARS	Airborne radar battlefield management and target location system	Full-scale development
RPV	Unattended air vehicle sensor platform	Joint program to evaluate platforms
Guard Rail/Common Sensor	Signals intelligence collection	Full-scale development
ACCS	C <sup>3</sup> I modernization programs	Range from interim deployment to full-scale development
ADDS		
MSE	Battlefield area communications	Non-developmental production/initial fielding
SINCGARS	Combat net radio	Full-scale development/production



**MULTIPLE LAUNCH ROCKET SYSTEM**

veloped to perform precision acquisition and laser designation of targets. They are also expected to make a major contribution to enhanced artillery effectiveness.

The fire-support mission area is not, however, confined to ground-based systems or to RPVs. The possible introduction of a Soviet helicopter with an air-to-air capability requires an appropriate US and allied response. Many of the Army's airframes are more than two decades old. The UH-60 BLACKHAWK and AH-64 APACHE programs, major modernization efforts, have been highly successful. However, shortfalls in required quantities of systems to counter the growing Soviet air-to-air, or air-to-ground, threats still exists. The Army is in the process of developing a new generation of airframes targeted on the urgent need to replace the Vietnam-era helicopter fleet. This new program will supplement those helicopters already fielded and will provide a viable kill capability against enemy armor and rotary-winged aircraft well into the 21st century.

Essential to the close and rear operations envisioned in the Army's Airland Battle doctrine is the ability of the ground force commander to maneuver in an environment relatively secure from air attack. The Forward Area Air Defense System (FAADS) is needed to meet the growing enemy air threat. The PATRIOT missile system would complement FAADS and provide defensive coverage of rear operational areas. Extremely capable against enemy high performance aircraft, the PATRIOT missile remains one of the Army's major modernization programs.

Along with the rapid modernization of conventional forces, a need exists to modernize our NSNF. This requirement remains a priority regardless of the outcome of future arms negotiations. Specifically,

long-recognized deficiencies in our aging nuclear forces demand that the immediate priority for DOD resources be provided to our AFAP and FOTL programs. These systems will play a key role in our ability to execute current NATO strategy.

In conclusion, to meet the global challenges presented by the Soviet Union and other potential adversaries, the Army has sought to make optimum use of constrained manpower and fiscal resources. The major elements of the Army modernization programs are displayed in Figure V-1. Much remains to be done; fiscal realities have slowed their rate of modernization. Significant milestones in 1987 included:

- Fielding three AH-64 APACHE battalions.
- Equipping US Army forces in Europe with the M1A1 ABRAMS tank with the 120 mm gun and an overpressure NBC protective system.
- Modernization of the RCs by fielding M60A3 or ABRAMS tanks.
- Activation of the 6th Infantry Division (Light) and the 10th Mountain Division (Light) in the AC, along with the 29th Infantry Division (Light) in the Army National Guard.
- Expansion and modernization of SOF configured to support regional requirements around the globe.

The capabilities to conduct Airland Battle operations are essential to our future success in combat against such a numerically superior and technically improved adversary.

## **Air Forces**

US Air Force tactical air forces support the theater and ground commander's operational campaign strategy by accomplishing close air support, battlefield air interdiction, air interdiction, offensive and defensive counter air, special operations, strategic and tactical airlift, intelligence, electronic combat, air refueling, maritime operations, and surveillance and reconnaissance. Therefore, in order to afford the ground commander freedom of action to take the battle to the enemy at the time and place of his choosing, our air and air defense forces must gain and maintain control of the air environment and take decisive actions immediately and directly against an enemy's warfighting capacity. Air power must be able to deny control of the air to enemy air forces.

The United States is continuing to improve its

combat air forces through a balance among procuring new systems, modifying existing capabilities, and enhancing sustainability. The advantage currently held by the United States is narrowing as the Soviets deliver new aircraft, the FLANKER (Su-27) and FULCRUM (MiG-29), to operational units in significant numbers. These aircraft feature improvements in maneuverability, fire control, airframe construction, electronics, armament, and range-payload capability. Improvement to Soviet in-flight refueling capabilities, further increases the effectiveness of Soviet combat aircraft.

Figure V-2 displays US and Soviet combat aircraft by category, and Figure V-3 compares tactical aircraft production rates. These production figures include both dual-role and single-role Soviet and US aircraft.

Because of a budgetary restriction, the US Air Force will stabilize at a 35 TFW-equivalent force structure during this Five-Year Defense Program. However, significant modernization will continue. For example, the fighter squadron deployed in Iceland has modernized from F-4Es to F-15Cs; two squadrons of F-16s have been established at Misawa Air Base, Japan, and F-16s have replaced F-4Es at Spangdahlem and Ramstein, Germany. In addition, the Air National Guard and the Air Force Reserve modernization includes additional F-15, F-16, and

F-4E conversions as well as modifying three A-7 squadrons with forward-looking infrared (IR) pods, new head-up displays, new computers, and radar refinements, all providing a much needed low-altitude night attack capability. In this timeframe, the F-15E DCA will begin to enter the inventory, adding to our critical all-weather, around-the-clock interdiction capability. In addition, the current force will be improved substantially through engine modification programs, increased air-to-air missile self-protection capabilities, and upgraded defensive systems for most tactical aircraft. Additional AIM-7M radar missiles and AIM-9M heat-seeking missiles being procured will add significantly to the US capability for air-to-air combat. Additionally, the availability of low-altitude navigation and targeting infrared for night (LANTIRN) pods will enhance the ability of tactical air forces to deliver ordnance on target during night and adverse-weather operations.

Although conventional capabilities have continued to improve; funding constraints have kept some portions of the total force, such as combat rescue and air refueling, from keeping pace with other forces.

Forces assigned to Strategic Air Command (SAC) continue to play a role in conventional operations. Long-range bombers from SAC have the capability to provide conventional support from CONUS or

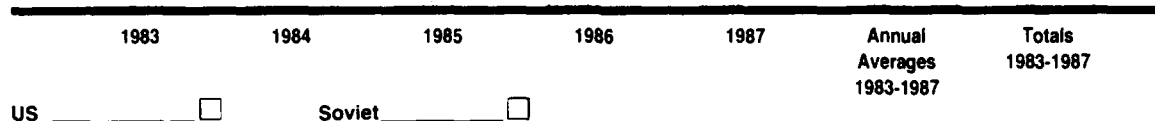
### **Current US-Soviet Combat Aircraft**

<b><u>Category</u></b>	<b><u>US Aircraft</u></b>	<b><u>USSR Aircraft</u></b>
Air-to-Surface	B-1B, B-52, FB-111 F-111, A-6 F-4, A-7, A-4, F/A-18, F-16 AV-8 A-10 P-3	BACKFIRE, BEAR, BADGER, BLINDER FENCER FLOGGER, FISHBED, FITTER, FOXBAT FORGER FROGFOOT
Air-to-Air	F-15, F-14, F-4 F-16, F/A-18	FLOGGER, FOXBAT, FOXHOUND, FIDDLER, FLANKER FULCRUM, FISHBED, FLAGON, FIREBAR
RECCE / EW / - AWACS	RF-4, SR-71, F-14 TARPS U-2, TR-1 RC-135 EF-111, EA-6, EA-3, F-4, F-16 E-3, E-2, EC-130 EP-3	FITTER, FOXBAT, FISHBED  BEAR, BLINDER FENCER, BREWER, BADGER MAINSTAY, MOSS, CUB

As of 30 September 1987

FIGURE V-2

## US-Soviet Annual Production of Tactical Combat Aircraft\*



\* Includes all fighters, fighter-bombers, combat capable trainers, and ASW

As of 30 September 1987

**FIGURE V-3**

forward bases. These modified aircraft can carry a wide-range of gravity bombs, stand-off munitions, naval mines, and HARPOON antiship missiles. Currently, all non-air-launched cruise missile-configured B-52Gs will relinquish their primary Single Integrated Operational Plan (SIOP) commitment in the late 1980s and be dedicated to a conventional role. When combined with modern stand-off munitions and electronic countermeasure sensors, this force will provide a cost-effective, joint, multimission, long-range, quick-strike conventional capability that should be fully employed. Eventually, B-1Bs will be capable of supporting conventional missions. The B-1B utilizes terrain-following radar and has a low-radar cross section giving it an improved all-weather, day-night penetration capability.

In-flight refueling by the KC-10 and KC-135 enhances the effectiveness and flexibility of US and allied aircraft. This capability allows tactical combat aircraft to carry maximum payloads and to employ

optimal tactics. The closure time for reinforcement of forces is also reduced by permitting nonstop transit to forward operating locations. In addition, timely aerial refueling extends the loiter time of surveillance and reconnaissance aircraft allowing more efficient



**USAF F-16 WITH AMRAAM**





### **B-52G LAYING MINES**

use of these assets. New initiatives have been taken to increase the interoperability of Air Force tankers supporting US carrier-based airpower.

Support of the SIOP is the primary mission of the KC-135 fleet; however, these assets must also support theater forces and conventional deployment and employment operations. To modernize and increase capability, KC-135s are being fitted with newer, more efficient engines. Acquisition of the KC-10 aids in alleviating the refueling and mobility shortfall. However, the requirement to provide refueling for conventional mobility and combat forces continues to expand.

The Navy's tactical aviation force is expanding to support a goal of 15 deployable aircraft carrier battle groups. The 14th active carrier air wing will be activated in FY 1988. Twelve of the 28 programmed Navy dual-mission F/A-18 squadrons have been established. By 1988, the Navy will have 16 active F/A-18 squadrons. A modernization program is under way to upgrade the F-14A, its PHOENIX missile system, and the A-6E to counter the threat of the 1990s. In FY 1988, the Naval Air Reserve will continue its modernization program. Fighter squadrons will complete transition to the F-14, medium attack capability will be added with the introduction of the A-6E, and a second strike-fighter squadron will complete its transition to the F/A-18.

### **Naval Forces**

As indicated earlier in the discussion of the maritime balance, the United States is inescapably a maritime nation. Our inevitable dependence on Free World trade in peacetime and the need to employ land and air forces overseas in war require access to and control of the high seas.



### **B-1B**

The classic missions of US naval forces have been sea control, power projection, and sealift. These translate into the tasks of antisubmarine warfare, anti-surface warfare, counter command and control, strike operations, anti-air operations, mine warfare, special operations, amphibious operations, and sealift. Should deterrence fail the objectives of US sea power are to destroy the Soviet Navy, influence the land battle by ensuring reinforcement and resupply and by directly applying carrier air and amphibious power, deny the Soviets the ability to apply a single front strategy by exerting global pressure on Soviet forces, thereby aiding in terminating the conflict on terms acceptable to the United States and its allies. Faced with the continuing expansion of Soviet sea power from a "brown water" to a truly capable global "blue water" navy, the United States has recognized the importance of maintaining naval forces that are ready to respond across the spectrum of conflict from peacetime presence to general war.

The force level objectives for the 600-ship Navy are



**KC-10 TANKER/CARGO AIRCRAFT**



USMC F A-18

20 to 40 strategic SSBNs, 15 deployable carrier battle groups, four battleship battle groups, 100 SSNs, 100 AAV combatants, 10 underway replenishment groups, seven convoy escort groups, 14 mine countermeasures ships, and sufficient amphibious ships to lift the assault echelons of a Marine Expeditionary Force (MEF) and a Marine Expeditionary Brigade (MEB).

The deployable battle forces of the US Navy have grown from 479 ships in 1980 to 568 at the end of FY 1987. Prior year Navy shipbuilding programs have provided the funding required to achieve 600 ships by the end of the decade. Building an average of 20 ships each year will sustain and modernize a 600-ship fleet indefinitely with minimal growth in force structure spending.

The 5-year shipbuilding plan submitted with the FY 1988-1989 President's Budget projects a total of



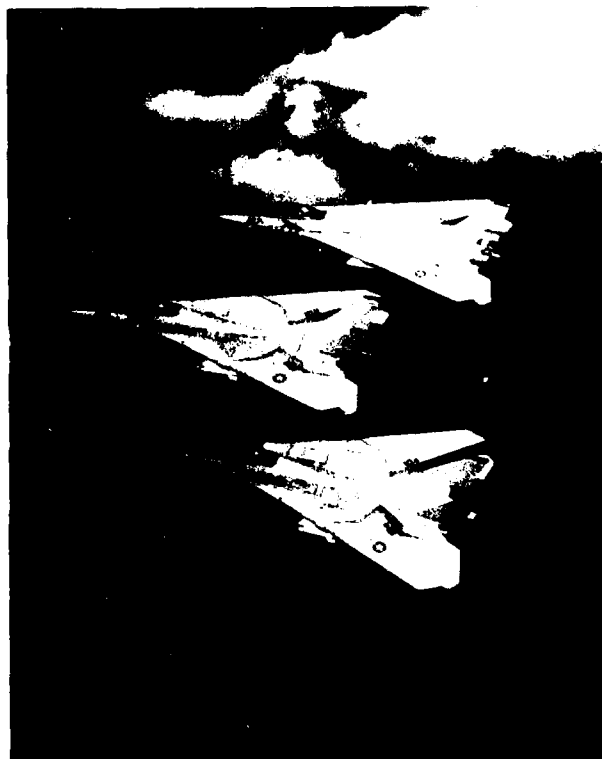
USN A-6E

102 new construction ships and 10 conversions from FY 1988 to FY 1992 (Figure V-4). Congress has accelerated the procurement of CG-47-class cruisers in order to achieve the savings possible from an early buyout. DDG-51s will be procured in FY 1989 and out in lieu of the cruisers programmed for those years. The FY 1989 budget includes funds for 19 new ships and four conversions.

The primary mission of the US nuclear attack submarines is to counter the formidable Soviet submarine force. As of the end of FY 1987, a total of 98 nuclear attack submarines were in the force. Of these, 37 are LOS ANGELES-class (SSN-688) submarines. Twenty-two additional ships of this class have been appropriated through FY 1988.

The SEAWOLF-class (SSN-21) submarine begins construction this year in order to maintain our qualitative lead over the Soviet submarine threat. The SEAWOLF will be quieter, faster, and more heavily armed than earlier classes.

USS THEODORE ROOSEVELT (CVN-71) was commissioned last year, bringing the number of deployable carriers in the fleet to 14. Two additional



USN F-14A



USMC HARRIER II

NIMITZ-class CVNs are under construction. The USS ABRAHAM LINCOLN (CVN-72) is scheduled to join the fleet in 1990 and the USS GEORGE WASHINGTON (CVN-73) in 1992. Long-lead funding is included in the FY 1989 budget for government-furnished equipment, contractor-furnished material, and prefabrication for CVN 74 and 75. This acquisition strategy will provide these ships earlier at a significant cost savings compared to single-ship buys. Because these carriers will be modified repeats of CVN 73, this program avoids the inherent risks and higher costs of a new design ship construction program.

Each of these ships is a completely integrated mobile tactical air base with support for 86 of the world's most sophisticated aircraft; an integrated wide-area battle management system; offensive and defensive combat systems; integral command, control, and communications; intelligence support; and sufficient ordnance and stores for extensive high tempo combat operations.

One conventionally powered aircraft carrier, USS KITTY HAWK (CV 63), entered the Service Life Extension Program (SLEP) last year. USS CONSTEL-



CVN-65 USS ENTERPRISE

### US Naval Shipbuilding Program

<u>Category/Class</u>	<u>FY-88</u>	<u>FY-89</u>	<u>FY-90</u>	<u>FY-91</u>	<u>FY-92</u>	<u>TOTAL</u>
Ballistic Missile Submarines _____	1	1	1	1	1	5
Nuclear-powered Attack Submarines _____	3	3	2	4	3	15
Aircraft Carriers _____	—	—	1	—	—	1
Cruisers _____	2	2	1	—	—	5
Destroyers _____	3	3	3	5	6	20
Amphibious Ships _____	2	1	1	2	2	8
Mine Warfare Ships _____	3	2	3	3	4	15
Support Ships _____	2	7	8	10	1	28
Landing Craft (Air Cushion) _____	—	9	12	12	12	45
<i>Conversions/Reactivations</i>						
Aircraft Carrier SLEP* _____	1	—	—	1	—	2
Oiler (Jumbo) _____	1	2	1	—	—	4
Auxiliary Crane Ship (Conventional) _____	2	2	—	—	—	4

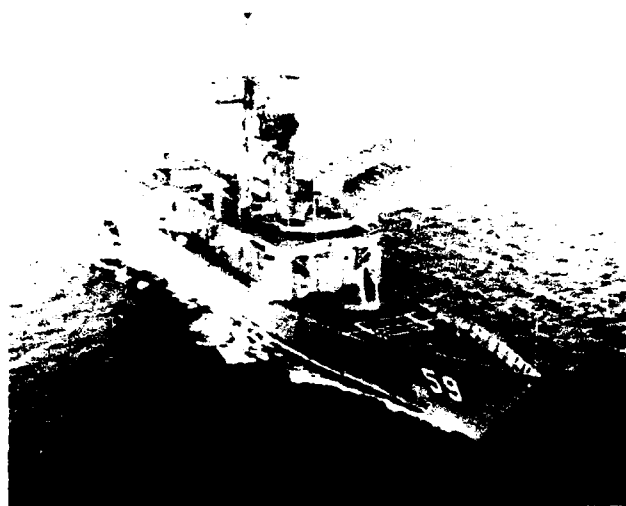
\* Service Life Extension Program

As of 30 September 1987

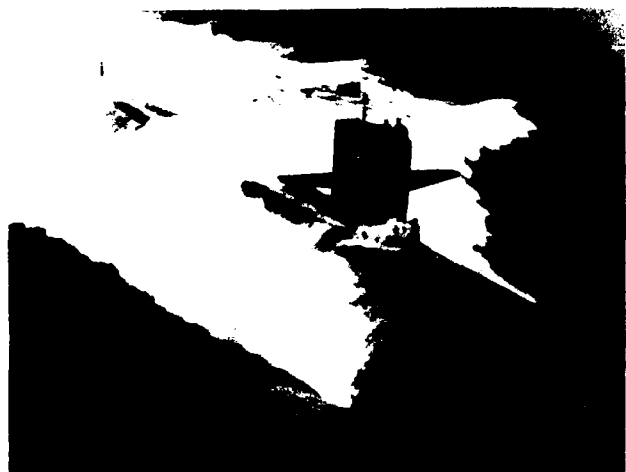
FIGURE V-4

LATION (CV 64) is scheduled to commence SLEP in FY 1991.

Last year, four more CG-47 TICONDEROGA-class guided-missile cruisers were commissioned, bringing the total number of these highly capable cruisers in the fleet to nine. An additional 13 ships of this class are under construction. The last five ships are included in the 5-year plan. The last CG-47 baseline will incorporate all the proven capabilities of the AEGIS combat system along with LAMPS III, the Vertical Launch System (VLS), TOMAHAWK missiles, the SQQ-89 ASW System, the SPY-1B radar, the SQS-53C sonar, and improved computers and displays.



**FFG-59 KAUFFMAN**



**SSN-718 USS HONOLULU**



**FFG-57 REUBEN JAMES**

The DDG-51 ARLEIGH BURKE-class guided missile destroyers are intended to replace the aging DDG-2-and DDG-37-class guided missile destroyers, which are reaching the end of their useful service lives. They will carry the AEGIS combat system, the VLS, the SQQ-89 ASW system, TOMAHAWK, HARPOON, and STANDARD (SM-2) missiles as well as a 5-inch/54 caliber lightweight gun, the Close-in Weapon System, and antisubmarine torpedoes. These ships will also incorporate enhanced survivability and damage control features. Congress funded the lead ship in the class in FY 1985. In FY 1987, two follow-on ships were approved. Twenty additional ships of this class are planned over the next five years.

The Soviets have over 300,000 naval mines and the capability to plant them in SLOCs and chokepoints and in key ocean and harbor areas. To counter this threat, more effective US mine warfare platforms, such as the AVENGER-class mine countermeasures ship (MCM)-1, will be needed. The first ship of the class was delivered in August 1987. Ten additional MCM-1-class ships have been appropriated by Congress. The lead ship of the new MHC-51-

class coastal minehunter was funded as an FY 1986 ship with funds originally intended for MSH-51-class ships. The FY 1989 budget request includes full funding for two follow-on units. A total of 12 MHC-51-class ships are included in the 5-Year Plan. In addition, the first of 32 MH-53E MCM helicopters entered the fleet in FY 1987.

Amphibious warfare ships are uniquely designed to support assault from the sea against defended positions ashore. They must be able to sail in harm's way and provide a rapid buildup of combat power ashore in the face of opposition. The United States maintains the largest and most capable amphibious force in the world, and the current building program will further enhance that capability as newer units join the Fleet. Congress has appropriated three WASP LHD-1-class amphibious assault ships to date. The FY 1989 budget includes funds for the LHD-4. Last year, Congress appropriated funds for the first LSD-41 (Cargo Variant). This ship will transport and launch amphibious craft, cargo, and vehicles and provide docking and repair services for conventional landing craft and two landing craft, air-cushion (LCAC).

### Amphibious Forces

The Navy-Marine Corps amphibious team is an effective combat force for deterrence and power projection. The mobility of the amphibious task force permits it to concentrate combat power when and where needed, accomplish the assigned mission, and then move on to other tasks. The Marine air-ground task force (MAGTF) consists of command, ground combat, aviation combat, and combat service support elements capable of amphibious forcible entry ashore to seize and control strategic chokepoints and lodgments essential to theater campaign plans. MAGTFs are organized and equipped primarily for amphibious operations but are also capable of responding to a variety of contingencies not requiring amphibious operations.

Operationally, the Marine Corps has no units with the primary mission of conducting special operations. However, in order to capitalize on the special operations capabilities inherent within MAGTFs, particularly forward-deployed Marine Expeditionary Units (MEU), the Marine Corps has undertaken a program to improve this capability. The Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC)) program enhances the capability of forward-deployed MEUs to conduct appropriate maritime-oriented special operations. MEUs (SOC) are conventional forces that are specially trained, equipped, and organized



LHA-5 USS PELELIU

into a MAGTF capable of conducting a broad range of special operations that offer a complementary contribution to the capabilities of designated SOF.

The MEF is the largest MAGTF, a tasked organized force normally formed from one division, an aircraft



USMC ASSAULT AMPHIBIOUS VEHICLE

wing, and a force service support group. During FY 1988, the Marine Corps will maintain three MEFs within its active structure, one in the Western Pacific and one on each coast of the United States. Upon mobilization, the Selected Marine Corps Reserve can augment or reinforce the three active MEFs or provide a fully capable Marine division, a Marine aircraft wing with reduced capability, and a force service support group with limited capabilities.

The firepower of the MEF has been improved by the increased effectiveness and range of both artillery and infantry weapons. Further, each MEF's counterfire capability has been improved by activating the last of three target acquisition batteries. Each MEF's antiarmor capability has been significantly increased with the addition of a TOW platoon to each infantry regiment. Other antiarmor improvements include procuring an improved light antitank weapon and improving the capability of the DRAGON antitank weapons in each infantry battalion.

The capability to execute amphibious operations is being improved by replacing older amphibious ships with the highly capable LHD-1, LSD-41, and LSD-41 Cargo Variant (CV) ships. Amphibious assault capability is also being improved by introducing LCAC and amphibious assault vehicles (AAV) into SLEPs. The LCAC can carry a 60-ton payload from an over-the-horizon launch to the beach at speeds in excess of 40 knots. Initial delivery of LCACs began in FY 1985 with IOC in FY 1986. The SLEP has extended the life of existing AAVs into the 1990s. Armored mobility and firepower on the ground have been improved with the further fielding of the light armored vehicle (LAV). Three AC LAV battalions have been activated. An RC LAV battalion is being activated in 1988.

The RPV program enhances the MAGTF commander's capability for target acquisition, battlefield surveillance, reconnaissance, and radio relay. The Marine Corps has activated three RPV companies, one in support of each MEF, and the Navy has activated RPVs on the USS IOWA (BB-1).

The Marine Corps continues to modernize its tactical air, air defense, and command and control systems, especially as exemplified by the Tactical Air Operations Module and continued transition to the F/A-18 and the AV-8B. By FY 1989, this modernization will include completed transition of nine F-4 squadrons to F/A-18, a second A-4M squadron to



USMC CH-53E

AV-8Bs, and the last AV-8A/C squadron to AV-8Bs. Marine Corps air defense is being improved by adding HAWK and STINGER missile units. The LASER MAVERICK, SIDEARM, STINGER RMP, HELLFIRE missiles, and GATOR mines will also improve Marine Corps aviation and air defense capabilities.

The modernization of Marine aviation continues with the acquisition of CH-53E heavy-lift and AH-1W attack helicopters. CH-53E lift capability permits airlift of over 93 percent of a division's combat essential equipment. The AH-1W provides an attack helicopter capable of conducting operations in high-altitude, hot-weather conditions and employing of the HELLFIRE, SIDEWINDER, and TOW weapon systems. Figure V-5 depicts major Marine Corps modernization programs. In the future, the flexibility of the MV-22 OSPREY will complement ground tactical mobility. With the IOC of the LCAC and the future planned capabilities of the MV-22, the initiation of amphibious over-the-horizon operations becomes a reality and a strategy that is competitive. The capabilities of the LCAC and MV-22 add immeasurably to the amphibious task force's ability to strike from a greater range, with the speed assuring reasonable surprise, and expeditious buildup of combat power and sustainability ashore. The tilt rotor MV-22 will be self-deployable with a speed in excess of 250 knots. It will be a potent lift vehicle capable of transporting 24 combat-loaded Marines from a variety of basing options and environments.

### Special Operations Forces

SOF are sized, structured, equipped, trained, and

## Marine Corps Modernization

<u>System</u>	<u>Description</u>	<u>Status</u>
CH-53E _____	Heavy lift helicopter	Three squadrons operational, 1 squadron in transition
AV-8B _____	VSTOL attack aircraft	In production, three squadrons operational
F/A-18 _____	Fighter/attack aircraft	In production, 8 of 12 squadrons converted from F-4
AAV _____	Assault amphibious vehicle	Undergoing major upgrades and service life extension
LAV _____	Light armored vehicle	In production, operational
LCAC _____	Air-cushion landing craft	In production, operational FY 1986
MV-22 _____	Vertical lift aircraft	In development
AH-1W _____	Attack helicopter	In production, one squadron converted
RPV _____	Remotely piloted vehicle	In limited production, operational FY 1990

As of 30 September 1987

**FIGURE V-5**



**SPECIAL OPERATIONS FORCES IN TRAINING**

supported to conduct special operations and to meet national and theater requirements in peace, crisis, and war. SOF are especially effective in resolving crises and terminating conflicts that are still at relatively low levels of violence. LIC is the most likely and dangerous form of international conflict the United States will face for the foreseeable future and is the form of conflict totalitarian forces have chosen to wage against the West in pursuit of expansionist goals. We must be careful to delineate between the capabilities inherent in SOF and the issues that we must address under LIC. We must also recognize that SOF deployed as trainers can provide a substantial benefit to host-country institutions attempting to meet the security of its citizens. Many of our allies are under attack through low-intensity warfare supported by the Soviet Union or Cuba. Additionally, terrorism, whether state-sponsored or conducted by

independent groups, remains a real and constant threat to both American and allied citizens. We must improve our ability to tailor, train, and equip forces to meet specific low-intensity requirements. We must also assist friendly forces by providing appropriate training and equipment. Finally, we must improve our forces' ability to combat terrorism by taking, in the near term, the requisite intelligence and security measures to deter or respond to terrorist attacks. Revitalization of SOF continues to be one of our highest priorities.

SOF revitalization is primarily directed toward correcting deficiencies in the areas of force structure, equipment modernization, and unit readiness. The Services continue to make steady progress toward correcting recognized deficiencies. The most visible result of the revitalization effort has been an increasing force structure, as shown in Figure V-6. Further expansion, based on new technologies, will complete the revitalization process in the early to mid 1990s. Enhancements in readiness are less apparent but equally important. In particular, Army SOF units are now manned at high levels consistent with their heavy peacetime utilization and early wartime deployment. Their equipment is being modernized, especially in the field of communications. Similarly, Air Force SOF units have benefited from enhanced maintenance as well as system upgrades. Naval special warfare units have received excellent resources support, as illustrated by accelerated dry-deck shelter procurement and weapons and communications acquisitions. These changes will institutionalize SOF as a vital element within our Armed Forces and ensure that

## **US Special Operations Forces**

<i>Service</i>	<i>Current Forces</i>	<i>Initiatives</i>
<b>ARMY</b>		
Active	<ul style="list-style-type: none"> <li>• 1 Special Operations Command</li> <li>4 Special Forces Groups</li> <li>12 Special Forces Battalions</li> <li>1 Ranger Regiment</li> <li>3 Ranger Battalions</li> <li>1 PSYOP Group</li> <li>4 PSYOP Battalions</li> <li>1 Civil Affairs Battalion</li> <li>1 Aviation Group</li> <li>1 Aviation Company</li> <li>1 Aviation Detachment</li> </ul>	<ul style="list-style-type: none"> <li>• Additional Special Forces group</li> <li>• Increases in Special Forces and PSYOP personnel, helicopters, and staff support</li> <li>• Equipment improvements</li> <li>• Additional special operations aviation</li> <li>• Modify MH-47E and MH-60K</li> <li>• Additional assault helicopter company</li> </ul>
Reserve	<ul style="list-style-type: none"> <li>• 4 Special Forces Groups</li> <li>12 Special Forces Battalions</li> <li>3 PSYOP Groups</li> <li>9 PSYOP Battalions</li> <li>22 PSYOP Companies</li> <li>3 Civil Affairs Commands</li> <li>5 Civil Affairs Brigades</li> <li>4 Civil Affairs Groups</li> <li>24 Civil Affairs Companies</li> <li>1 Aviation Battalion</li> </ul>	<ul style="list-style-type: none"> <li>• Increased language capability/area orientation</li> <li>• Equipment modernization</li> </ul>
<b>NAVY</b>		
Active	<ul style="list-style-type: none"> <li>• 1 NAVSPECWAR Command</li> <li>2 NAVSPECWAR Groups</li> <li>3 NAVSPECWAR Units</li> <li>6 SEAL Teams</li> <li>2 SEAL Delivery Vehicle Teams</li> <li>3 Special Boat Units</li> <li>3 Dry-Deck shelter-capable submarines</li> </ul>	<ul style="list-style-type: none"> <li>• 2 Additional NAVSPECWAR Units</li> <li>• Additional SEAL team</li> <li>• Procurement of specialized equipment</li> <li>• Construction of special facilities and support craft</li> <li>• 3 Dry-Deck shelter-capable submarines per fleet</li> </ul>
Reserve	<ul style="list-style-type: none"> <li>• 5 NAVSPECWAR Group Detachments</li> <li>3 NAVSPECWAR Unit Detachments</li> <li>3 SEAL Team Detachments</li> <li>2 Special Boat Squadrons</li> <li>4 Special Boat Units</li> <li>1 Engineer Support Unit</li> <li>2 Light Attack Helicopter Squadrons</li> </ul>	
<b>AIR FORCE</b>		
Active	<ul style="list-style-type: none"> <li>• 1 Numbered Air Force</li> <li>1 Special Operations Wing</li> <li>5 Special Operations Squadrons</li> <li>1 Combat Control Squadron</li> </ul>	<ul style="list-style-type: none"> <li>• Procure MC-130 COMBAT TALON II aircraft</li> <li>• Modify MH-53 PAVE LOW III - enhanced helicopters</li> <li>• Procure AC-130U SPECTRE gunships</li> <li>• Procure CV-22A Tilt Rotor (VTOL) aircraft</li> <li>• Upgrade AC-130H and MC-130E navigation and avionics</li> </ul>
Reserve	<ul style="list-style-type: none"> <li>• 2 Special Operations Groups</li> <li>3 Special Operations Squadrons</li> </ul>	<ul style="list-style-type: none"> <li>• Upgrade EC-130 VOLANT SOLO aircraft</li> <li>• Procure and upgrade MH-60G</li> </ul>

As of 30 September 1987

**FIGURE V-6**



effective joint SOF will be available when needed to attain national security objectives.

In the past year, we have made great strides in correcting the most crucial SOF issue — airlift support. For some time, both the Administration and the Congress have recognized that airlift constitutes our most serious special operations deficiency. The FY 1990-1994 program maintains funding needed to meet requirements. In the near term, we are increasing the readiness of the force, procuring additional fixed and rotary-wing aircraft, and for the first time, incorporating dedicated SOF tanker support. We are procuring the CV-22A, the next generation SOF aircraft, and additional dedicated tanker support. For the FY 1990-1994 period, we have programmed a total of \$5.0 billion of SOF airlift enhancements, new aircraft, and systems upgrades.

Establishing the four-star US Special Operations Command was the culmination of independent congressional and JCS analyses of the joint SOF C<sup>2</sup> issue, with implementing legislation signed by the President on 18 October 1986. On 16 April 1987, the United States Special Operations Command (USSOCOM) was activated at MacDill AFB, Florida. USSOCOM is tasked to centralize the management and oversight of SOF resources, training, readiness, doctrine, interoperability, and equipment requirement validation while preserving the regional CINCs' capability to employ SOF in theater through their own respective special operations commands.

## **EMPLOYING AND SUPPORTING THE FORCES**

### **Force Capabilities**

The United States continues to maintain a qualitative advantage in both trained personnel and fielded systems. However, the advantage afforded by superior quality continues to erode as the Soviets field modernized systems in significant quantities.

For example, in comparing armored systems, the US M1A1 and Soviet T-80 main battle tanks represent different concepts deriving from different requirements. The M1A1 weighs 64 tons while the T-80 weighs 43 tons when combat loaded. Each is powered by a gas turbine engine. The T-80 is equipped with the 125mm smoothbore gun and automatic loader while the M1A1 is being regunned with the German-designed 120mm smoothbore. The Soviets have opted for a combination of laminate with



**M-1 ABRAMS MAIN BATTLE TANK**

nonmetallic elements and reactive armor to increase protection over the frontal 60-degree arc.

The United States has long recognized the effectiveness of helicopters to support antiarmor attack. In the HAVOC, Soviet designers have concentrated on providing a good low-speed, out-of-ground-effect fighting capability that has not been found on current generation Soviet helicopters. Another new helicopter, the HOKUM, which has no current Western counterpart, may give the Soviets a significant rotary-wing air-to-air combat capability.

The Soviets are also improving the capability of air-to-air and air-to-ground aircraft. As mentioned earlier, the SU-27 FLANKER and MiG-29 FULCRUM have become operational with a look-down, shoot-down capability and new medium beyond-visual-range air-to-air missiles. These new generation Soviet fighters possess combat capabilities similar to F-15 and F-16 fighters and pose a significant wartime air-superiority threat.

At sea, Soviet submarines are greater in number. US submarines are quieter. The Soviets lack effective fixed-wing sea-based air and amphibious warfare forces and have limited distant power projection capabilities, but they are diligently working to close the gap.

Quality and quantity alone do not measure combat capability. The readiness of forces to perform their missions depends on the personnel, facilities, and material resources provided, as well as how those resources are trained and maintained. The capabilities of US forces continue to improve because of success-

ful recruiting and retention efforts, improved training, increased emphasis on the equipment modernization programs, and enhanced facilities and logistic support programs. Sustained funding is required to maintain the current momentum.

### **Munitions Availability and Utilization**

A high rate of employment of modern munitions, along with lesser quantities of standard munitions during the early days of a conflict, is critical for rapid attrition of the numerically superior enemy forces. This mix will gradually shift to larger quantities of standard and lesser quantities of modern munitions as our forces become more survivable and enemy capabilities are reduced. To this end, munitions development must continue to provide solutions for upgrading present systems as well as developing smart munitions that incorporate advanced technology components such as sensors, signal processors, and real-time data processing.

From an effectiveness standpoint, replacing the existing stockpile of conventional munitions with new modern munitions is desirable. However, it is not prudent since our current investment in the stockpile is in excess of \$30B. At present, our solution is to utilize our modern munitions wisely and plan for an early transition to the standard stockpile.

### **Chemical Warfare Capabilities**

The adequacy of the US chemical warfare (CW) posture remains a matter of grave concern. Chemical weapons proliferation continues throughout the world as evidenced by the recent CW use in the Iran-Iraq War. Many other countries are now believed to have the capability to produce or employ chemical weapons. The USSR continues to maintain the world's most significant capability to employ chemical weapons. The USSR and its surrogates have used chemical and toxin weapons in South East Asia and Afghanistan despite the fact that the USSR is a signatory to the 1925 Geneva Protocol. The United States, which is also a signatory, has a policy of no first use of chemical weapons. However, the United States reserves the right to retaliate should it or its allies be attacked with these weapons.

From 1969 through 1986 the United States refrained from producing chemical weapons in the hope that the Soviets would exercise similar restraint. The Soviet Union, meanwhile, has continued to develop its CW capabilities by pursuing a vigorous research and development effort, stockpiling large quantities of chemical agents, maintaining an extensive agent

production capability, deploying chemical weapons with modern delivery capabilities, and training extensively in CW. Since the mid-1970s, the United States has tried unsuccessfully to negotiate an effective, verifiable chemical weapons arms control agreement. Meanwhile, the United States continues to focus its efforts on defensive CW capabilities and modernization of a limited retaliatory capability.

The United States has made progress in its joint chemical defense program with contamination avoidance, protection, and decontamination as the program's cornerstones. Individual protective equipment is available to all Services; improved detection equipment has been fielded; and fixed and portable collective protection systems are being procured. Joint research and development is under way to provide better equipment to all Services, including a remote, long-range chemical agent detector; a nuclear, biological, and chemical (NBC) reconnaissance vehicle; non-aqueous decontamination; and medical pretreatments and antidotes. Figure V-7 outlines the current US chemical defense posture. Chemical defense programs require continued strong support.

Despite improvements in defensive chemical programs, a defensive chemical posture is not enough. The aging US stockpile of present-day weapons is rapidly losing its deterrent value. The United States must have a credible CW retaliatory capability to deter enemy use of chemical weapons. The majority of US chemical munitions can no longer be used effectively in combat. Critical deficiencies in the current stockpile include mismatched agent types with weapons systems; obsolete agents and munitions; leaking and hazardous munitions; and



**CHEMICAL WARFARE DECONTAMINATION TRAINING**

## **US Chemical Warfare Protection Capabilities**

<i>Category</i>	<i>Currently Used</i>	<i>Planned Improvements</i>
• Individual protection	• Protective mask • Protective overgarment	• Improved mask • Less restrictive overgarments
• Collective protection	• Limited shelters	• Transportable shelters • Fixed site shelters • Shipboard upgrades • Portable modular systems
• Detection and warning	• Detection paper • Chemical agent alarm • Chemical agent detector kit	• Hand-held monitor • Unattended remote sensor • Point scanner • NBC recon vehicle
• Decontamination	• Individual decontamination • Decontamination apparatus • Chemical agent-resistant coatings • Lightweight decontamination system	• Non-water-based decontamination

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**FIGURE V-7**

the lack of certified delivery aircraft for chemical bombs and spray tanks. A most critical deficiency is the shortage of chemical agent filled munitions (persistent and nonpersistent) that can be delivered against targets beyond artillery range. The Soviets can attack and degrade not only close-in targets but also airfields, logistic nodes, and command and control facilities. US and allied forces have a very limited capability to retaliate and impose similar degradations on the Warsaw Pact.

To provide a credible CW deterrent, the United States needs to acquire modern chemical munitions and improved delivery means. The binary chemical munitions currently under development provide a modern, credible deterrent with a smaller, safer stockpile that will correct the deficiencies of the unitary weapons. Only by establishing a credible CW retaliatory capability can the United States hope to enhance deterrence and persuade the Soviets and other CW-capable countries to seriously negotiate a chemical weapons ban. Figure V-8 summarizes US retaliatory capabilities and modernization programs.

### **Reserve Force Contributions**

Reserve forces, which constitute approximately 45 percent of the total force structure, play a key role in implementing US military strategy. Over one-third of the Army's combat divisions are in

the Army National Guard; two-thirds of the combat service support force structure are in the RC. The US Air Force Reserve provides 50 percent of the crews for the Military Airlift Command (MAC) Active and Associate Reserve C-5 and C-141 strategic airlift squadrons and 40 percent of the crews for the SAC KC-10 tanker-cargo squadrons in the Reserve Associate Program. In addition, 19 percent of the C-5 aircraft and seven percent of the C-141 aircraft are in the RC unit-equipped role; 93 percent of the Air Force aeromedical evacuation aircrews, 59 percent of the tactical airlift aircraft, 51 percent of the reconnaissance aircraft, 79 percent of the CONUS strategic interceptor forces, and 34 percent of the tactical fighter forces belong to the Air National Guard and Air Force Reserve.

The Naval Reserve operates 100 percent of the Naval US-based logistic aircraft squadrons and contributes 35 percent of the Navy intelligence personnel. The Coast Guard provides 90 percent of port security forces for deployment ports. The Marine Corps Reserve provides 25 percent of the Marine Corps structure. This force consists of a division (reinforced), aircraft wing, and force service support group.

Reserve forces play an important role in day-to-day operations. Within the last year, over 30,000

## US Chemical Retaliatory Capabilities

Inventory	CURRENT			PLANNED IMPROVEMENTS
	Amount of Total Inventory	Condition	Deficiencies	Binary Systems
• Persistent and Nonpersistent Nerve Agent Artillery	↑ 10% ↓	• Useful	• Limited to artillery range • Wrong agent to weapon mix • Aging stockpile	• Against enemy frontline troops • 155mm artillery projectile with non-persistent agent
• Nonpersistent Nerve Agent Bomb		• Limited Use	• Wrong agent to weapon mix • Aging stockpile	
• Persistent and Nonpersistent Agent Small Artillery and Mortars	↑ 18% ↓	• Limited Use	• Short range • High risk to friendly forces • Does not support modern tactics	• Against enemy follow-on troops and complexes • MLRS chemical warhead with semi-persistent agent
• Airborne Spray Tanks		• Limited Use	• High risk delivery method • Does not support modern tactics	
• Bulk Nerve Containers • Bulk Mustard Containers	↑ 72% ↓	• Of No Use	• No fill facilities • No useful munitions to fill	• Against large enemy troop concentrations, airfields, and logistic complexes • BIGEYE bomb with persistent agent
• Other Configurations		• Obsolete	• No delivery system	

As of 30 September 1987

FIGURE V-8

Army and 6,000 Air National Guard and Reserve members participated in major international exercises. Of particular note was Exercise BLAZING TRAILS, in which 10,000 members of Army National Guard and Army Reserve units serving their annual training constructed bridges and built and repaired 15 km of road in the rain forests of Panama and Honduras over a 4-month period. This exercise provided outstanding real-world mission training and demonstrated the US commitment to the welfare of our neighbors in Central America. Naval Reserve maritime patrol aircraft (P-3s) routinely perform land-based ASW patrols from bases in the Atlantic and Pacific. In addition to their primary mission of refueling SAC alert forces, Air Reserve Component tankers support forces in Europe, the Pacific, and Alaska. Air Reserve aerial port teams regularly provide augmentation at major air terminals in CONUS and overseas. Tactical airlift forces provide over 10,000 hours per year of joint airborne and air transportability training missions. Air Reserve Component C-5 and C-141 aircrews routinely fly approximately 30 percent of MAC's worldwide missions. The increasing number of Naval Reserve Force frigates maintain wartime readiness while operating

and exercising with active force ships. The Coast Guard Reserve provides waterborne security for all space shuttle launches at Cape Canaveral, escort of TRIDENT submarines, and other events when necessary to establish port security zones. During FY 1987, Marine Corps Reserves participated in 20 major exercises conducted in CONUS, Hawaii, Korea, Norway, West Germany, Thailand, the Middle East, and the Mediterranean area.

Early access to RC capabilities was significantly improved with the signing of the FY 1987 DOD Authorization Act. The new law increases the presidential authority to augment active forces from 100,000 selected reservists for up to 90 days to 200,000, with authority to extend the duration an additional 90 days. This was done to meet the needs of the unified and specified commands and to prepare the CONUS mobilization base for further expansion and has been approved by the President.

### Training and Exercises

Realistic and challenging training is essential to the development and maintenance of US capabilities.



C-141

Facilities such as the Army's National Training Center, the Marine Corps' Air-Ground Combat Center, the Air Force's Tactical Fighter Weapons Center, the Joint Readiness Training Center, and the Strategic Training Route Complex provide environments in which units can experience wartime conditions against realistic adversaries. Data gathered at these and similar facilities allow the Services to improve doctrine, tactics, training methods, and unit operating procedures. Range modernization, acquisition of training simulators and devices, and the increased use of technology are helping to provide more effective, realistic training. Cooperative training projects with our NATO allies provide economies of scale and enhance standardization of tactics and procedures.

As an important extension of Service training, the exercise program directed and coordinated by the Joint Chiefs of Staff provides opportunities to evaluate joint doctrine, tactics, techniques, and procedures; and command and control capabilities — knowledge essential to ensure the readiness of US forces to support the unified and specified commands. This program, which includes approximately 81 exercises per year, takes place throughout the world. The JCS worldwide command post exercise program provides the staffs of the unified and specified commands the opportunity to deal with the difficult problems associated with mobilizing, deploying, and employing US combat forces. Additionally, combined exercises with allies provide the necessary interaction to test and evaluate combined systems, effectiveness of LOCs, and adequacy of mutual support agreements.

In addition to supporting general training objectives, joint exercises demonstrate US resolve and the capability to project a military presence in support of national interests and commitments. The BRIGHT

STAR series of exercises conducted in Southwest Asia demonstrates the US capability to project military forces into that region should the need arise. In Latin America, the annual AHUAS TARA and CABANAS exercises demonstrate US commitment to Honduras and Central American stability. Similarly, each year, seven South American countries participate in the combined Exercise FUERZAS UNIDAS. Panamanian defense forces also participate with US forces in the Canal defense exercise KINDLE LIBERTY. In Europe, we practice the reinforcement of NATO with annual REFORGER and CRESTED CAP exercises. The Pacific region annually hosts the largest Free World combined training exercise — TEAM SPIRIT. Bilateral US-Japan Self-Defense Force training is conducted through day-to-day activities and joint or combined exercises such as KEEN EDGE, YAMA SAKURA, JANUS, RIMPAC, and COPE NORTH. COPE THUNDER, which takes place in the Philippines, provides US and allied aircrews with training that greatly enhances combat survivability. The magnitude and scope of joint and combined exercises continue to demonstrate resolve and support for US allies in all regions. The SOLID SHIELD and OCEAN VENTURE series of exercises, conducted in the Caribbean, Gulf of Mexico, and Puerto Rico, demonstrate US commitment to defense of that region, while in the North Atlantic, NORTHERN VIKING exercises the US support of the ground defense of Iceland.



**BRIDGE BUILDING DURING EXERCISE REFORGER**

These various full-spectrum training and exercise programs are essential to maintaining the readiness of theater-assigned and augmentation forces. The programs serve as an excellent means of testing all aspects of US reinforcement plans and the in-

teroperability of host-nation general defense plans, systems, and procedures. The programs also demonstrate the capability to deploy substantial military power while providing a means for evaluating fighting concepts and procedures, interoperability, and force sustainment.

Service regional training initiatives are also essential to prepare RC personnel for their wartime mission. With emphasis on weekend training, the Navy has programmed 40 regional training sites. The Army has programmed both regional medical and maintenance training facilities. The latter will provide maintenance training with the battlefield mix of current and modern equipment using state-of-the-art test measurement and diagnostic equipment along with special tools and test equipment and training devices.



**DRAGON MISSILE OPERATION DURING TEAM SPIRIT EXERCISE**

### **Mobility**

US military strategy requires the capability to deploy forces rapidly and then sustain them. Air, sea, and land mobility forces must be able to deliver forces where they are needed in time to make a difference. Strategic and theater airlift will generally transport deploying forces during the early days of a crisis until surge sealift arrives with the bulk of the deploying unit's equipment. These early movements will link personnel and equipment with their in-theater pre-positioned stocks and equipment. Sealift delivers follow-on forces and provides the sustaining power for deployed forces. Land mobility forces must provide offload capabilities and, together with intratheater airlift and sealift, support onward movement.



**C-5B**

### **Airlift**

Airlift is essential to protect US interests across the spectrum of conflict. During peacetime, military airlift forces provide a global air transportation network that supports normal lift requirements, exercises, humanitarian missions, aeromedical evacuation, and mobility training. During wartime, requirements are greater and airlift is crucial to the rapid worldwide deployment of US forces. Programmed increases in strategic aircraft, continued acquisition of aircraft spares, extensions to service lives of existing aircraft, and enhancements of Civil Reserve Air Fleet (CRAF) capabilities are essential improvements in airlift readiness and sustainability. It is important that our aerial port and mobility forces be sufficiently maintained to meet the growth in the nation's airlift capability. A summary of airlift forces is shown in Figure V-9.

The FY 1989 funded airlift force will provide approximately 47.0 million ton-miles per day (MTM/D) of strategic cargo airlift capability, well below the current DOD goal of 66 MTM/D which we expect to approach at the turn of the century. The acquisition of C-5Bs, C-17s, and additional KC-10s will continue the upward trend in strategic airlift support. Wing repairs and modifications will extend the service life of the C-130B/E aircraft well past the year 2000.

The CRAF consists of commercial aircraft voluntarily committed by US civil air carriers to serve during national emergencies. The CRAF Enhancement Program is designed to modify passenger aircraft into convertible freighters suitable for bulk and oversize cargo. Two DC-10s and 10 more B-747s have been modified through FY 1987. An additional nine B-747s are funded for modification. These modified aircraft will provide an additional 3.2 MTM/D of

cargo capability. FY 1988-1990 funding will allow initial acquisition of equipment needed to convert 85 civilian B-767 and 30 MD-80 aircraft to perform aeromedical evacuation. Their initial operational capability is planned for FY 1990 and full operational capability is planned for FY 1991.

The C-17 is programmed to reduce further the intertheater airlift shortfall with the initial operational capability scheduled for FY 1992, ultimately contributing 27.5 MTM/D toward the 66 MTM/D goal. This aircraft will provide increased strategic and theater capabilities to deliver troops and all categories of cargo, including outsize, to field commanders using normal and combat offload techniques, outsize airdrop, or low-altitude parachute extraction. The in-flight-refuelable C-17 has outstanding ground maneuverability and takeoff and landing profiles designed to allow routine operations at small, austere airfields. These features will provide considerable operational flexibility. The C-17 will replace part of the C-141B fleet as that aircraft approaches the end of its useful service life. The C-17 also offers the additional bonus of offsetting capabilities lost when the older C-130s retire. Additional aeromedical evacuation capability will be provided by the C-17

operating in the direct delivery mode. A summary of programmed strategic cargo airlift capability is shown in Figure V-10.

### Sealift

In any major overseas deployment, sealift will deliver about 95 percent of all dry cargo and 99 percent of all petroleum products. However, the number of militarily useful US-flag dry cargo ships available to support deployments continues to decline with little hope of resurgence in the near term. Reductions are also occurring in the US clean product tanker fleet.

The US-flag merchant marine's decline has necessitated establishing a large pool of government-owned shipping in the Ready Reserve Force (RRF) to furnish readily available lift in time of mobilization. The Navy located 51 RRF ships at activation ports to improve its response time upon mobilization. One

### US Airlift Forces

#### Military Aircraft

Type	Number** (Active/Reserve)
C-5	66*/15
C-141	218*/16
C-130	206/296
KC-10	56*/0

#### Civil Reserve Air Fleet

Type	Number**
Domestic	34
Alaskan	11
Short-range International (passenger)	13
Short-range International (cargo)	4
Long-range International (cargo)	77
Long-range International (passengers)	253

\* C-5, C-141, and KC-10s are jointly operated by Active and Reserve Associate Units

\*\* Full Activation

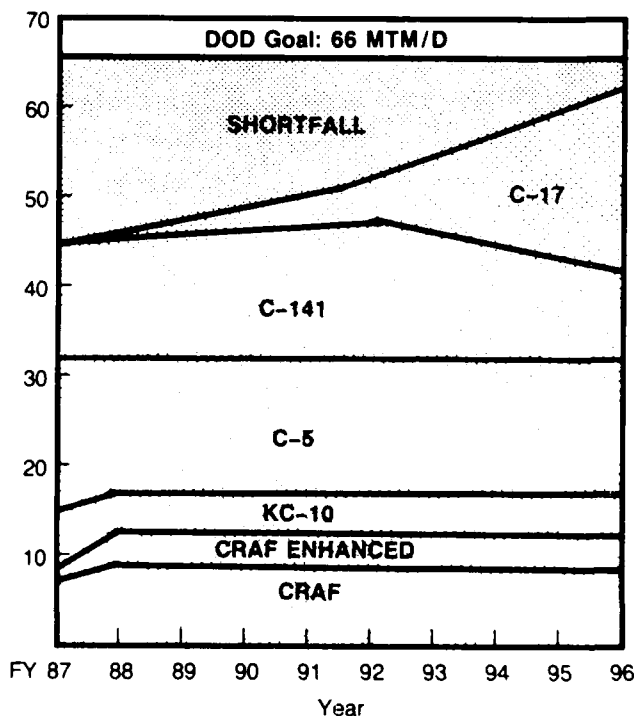
As of 30 September 1987

FIGURE V-9

### US Intertheater Cargo Airlift Capability

(Funded)

Total MTM/D\*



\* Million ton-miles per day

As of 30 September 1987

FIGURE V-10

additional ship will be outported during FY 1988. Ships in the National Defense Reserve Fleet (NDRF), a second set of government-owned shipping, are an aging asset, currently capable of providing approximately 125 ships for sustainment requirements and attrition replacements. Ninety-six of these are WW II VICTORY-class ships. A crucial factor in employing both the RRF and NDRF is the availability of trained crews to adequately man these vessels.

Sealift support from our allies has become increasingly important to offset the continued decline in US commercial sealift assets. NATO has promised over 600 ships for the rapid reinforcement of NATO, and Korea has promised 31 ships for its support. However, the NATO shipping pool has declined sharply. This fact may in the future cause NATO to institute some type of reflagging procedure similar to the effective US-controlled fleet. Strategic sealift resources are shown in Figure V-11.

<b>Strategic Sealift Resources</b>		
<b>(Funded)</b>		
<b>Non-Gov't Controlled Ships</b>	<b>Dry Cargo</b>	<b>Tankers</b>
US Flag Merchant Ships _____	152	126
Effective US Controlled (EUSC) _____	23	96
<b>Government Controlled Ships</b>		
<b>Military Sealift Command</b>		
• Common User Ocean Transportation _____	10	22
• Afloat Prepositioning Force (APF)		
Maritime Prepositioning Ships (MPS) _____	13	
Prepositioning Ships (PREPO Ships) _____	8	4
• Reduced Operating Status (ROS)		
Fast Sealift Ships (FSS) _____	8	
Aviation Logistic Support Ship (TAVB) _____	2	
• Ready Reserve Force (RRF) _____	85	7
<b>Maritime Administration (MARAD)</b>		
• National Defense Reserve Fleet (NDRF)		
NDRF Useful _____	50	16
NDRF Victory Ships _____	96	
<b>US Total</b>	<b>447</b>	<b>271</b>
<b>Allied</b>	<b>Cargo</b>	<b>Tankers</b>
NATO Pool _____	400	61
Other Flag Ship Pool* _____	27	4
<b>Allied Total</b>	<b>427</b>	<b>65</b>

\* Not intertheater assets

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FIGURE V-11

Strategic sealift has been enhanced through other programs. The eight Fast Sealift Ships provide an extensive, swift mobility capability and have been used extensively in major exercises. Two aviation logistics support ships (TAVB) have completed conversion and been placed into an RRF-like status. These ships provide the lift for intermediate-level maintenance facilities to support Marine Corps aircraft. Two former tankers have been converted into hospital ships (TAH). These ships provide medical facilities afloat, with operating rooms and hospital beds.

### Logistics Over the Shore

The ability to rapidly load, offload, and transfer unit equipment, bulk liquids, ammunition and supplies must keep pace with airlift and sealift deliveries. Mobility analyses, such as the DOD Sealift Study, have identified the requirement to project a large, balanced force into austere environments like those found in the Western Pacific, Southwest Asia, or Central and South America. A major program is now under way to modernize and upgrade the Army's watercraft fleet to meet logistics over the shore requirements. The logistics over the shore capability has been improved through adding another company of LACV-30 air-cushion vehicles; it will improve further with the purchase of discharge systems such as modular causeways and RO/RO discharge facilities and the procurement of logistics support vessels (LSVs) and landing craft, utility (LCU), and large tugboats. The Army LOTS program totals \$690M in FY 1988-1992 for research, development, and acquisition of new watercraft to provide the capability to meet a minimum LOTS requirement of 21,000 short tons daily. Under the Logistics Civil Augmentation Program, the Army is establishing contingency contracts for commercial tugboats to supplement Army organic capability during mobilization. The Army and Navy are coordinating closely under a joint memorandum of agreement to procure, whenever possible, common and interoperable offload and discharge systems to ensure system compatibility, minimum overall cost to the Department of Defense, and maximum program support during the budget process. LOTS capability is further improved through the addition of six of the total of 12 auxiliary crane ships (TACS), converted non-self-sustaining containerships now capable of offloading other ships either at pierside or in-stream. Additionally, the Navy has converted one former tanker into an offshore petroleum discharge system (OPDS), capable of providing large quantities of petroleum from in-stream. A second tanker is scheduled for delivery in FY 1988.



### **Pre-Positioning**

To overcome limitations of airlift and sealift, US programs for pre-positioning petroleum, water, supplies, unit and war reserve equipment, and ammunition are in progress in various regions of the world. Such pre-positioning reduces rapid-deployment cargo requirements by locating essential materials where US forces would most likely be needed. Under the POMCUS program, equipment is being pre-positioned in Europe for six Army divisions and numerous nondivisional support units. The POMCUS program for Europe, the Marine Corps land pre-positioning in Norway, the pre-positioning of war reserve stocks for allies (WRSA) in Korea, the USAF NATO pre-positioning procurement package (PPP) program, and the operational project stocks for Southwest Asia provide essential strategically located material.

Afloat pre-positioning allows the rapid movement of equipment and supplies from one region to another as priorities or circumstances dictate. The Afloat Pre-positioning Force consists of two elements: the maritime pre-positioning ships (MPS) program and the pre-positioning (PREPO) ships program (formerly near-term pre-positioning force (NTPF)).

The MPS program combines the responsiveness of airlifted Marines with sealift delivery of pre-positioned equipment. The 13 ships involved in the program are organized into three MPS squadrons. The ships will carry equipment and 30 days of supplies for three MEBs. The first squadron is deployed to US Atlantic Command's (USLANTCOM) area; the second is at Diego Garcia; and the third deployed to Guam/Tinian in the US Pacific Command (USPACOM). The 12 PREPO ships are in the Mediterranean Sea and Indian Ocean carrying equipment and supplies for the Army, Navy, and Air Force. A TACS will be added to the PREPO ships program in FY 1988.

### **Readiness**

The proficiency of US forces units, weapon systems, and equipment to carry out assigned tasks remains high. The quality of the young men and women in the force is the key component to our military potential. As can be seen in recent operations, the force is prepared. Attaining and maintaining a realistic readiness level requires continual effort and supervision. Deploying rapidly, seizing the initiative, then employing and controlling the battle to meet our ends are the culmination of readiness and Day-one effectiveness.

### **Sustainability**

Sustainability is the staying power of military forces once they are deployed. The most significant component of this is materiel sustainability. Materiel sustainability is composed of several interdependent elements, including theater pre-positioned stocks, CONUS depot stocks, host-nation support, and the industrial production base. Over the past several years, Service program efforts have improved US sustainability worldwide; however, the pre-positioning objectives represent only the minimum quantities required to sustain combat forces until the SLOCs can be securely established.

### **Ammunition**

Although ammunition stockpiles have improved, commanders continue to identify inadequate ammunition stockpiles as a significant constraint on their combat capabilities. These shortages are particularly acute for the more modern munitions that provide increased firepower while reducing delivery system vulnerability. The Services have continued to fund increases in war reserve ammunition stockage. Additionally, the United States has been encouraging allies to improve their own ammunition sustainability and to produce munitions compatible with US pre-positioned stocks within their countries.

### **Petroleum, Oils, and Lubricants**

Efforts continue to increase petroleum war reserves. Competing priorities for funds within NATO have delayed major improvements to the Central European Pipeline System to increase both hardened storage capacity and throughput capability. It is becoming increasingly more important to rebuild DOD land and ocean distribution assets so available stocks can be rapidly repositioned where and when needed. The Navy has accepted the mission responsibility for delivery of bulk petroleum products to the high tide mark on the beach for all Services. The Army and Navy are progressing with the development of the OPDS, which will allow bulk fuel discharge from large tankers across an unimproved beach or damaged port. OPDS supports the fuel requirements of Army, Air Force, and Marine Corps units operating ashore. USPACOM is also pursuing military construction of new storage. However, due to competing priorities for funding, shortfalls in government-owned tankage continue.

### **Major Items and Repair Parts**

As with other classes of supply, there have been improvements in recent years in the war reserve posture of major items, as well as spares and repair

parts. Nevertheless, available stocks continue to be far below worldwide requirements and are an item of concern for commanders. In part, this is the result of long leadtimes for acquisition. Additionally, these items receive a relatively low priority when competing for funding at a time when there continue to be shortages in peacetime operating assets and unit authorizations.

### **Military Construction**

FY 1988 was to be the final year of significant programming for construction of the GLCM sites. As a result of the INF Treaty, funding to complete these GLCM sites is no longer required. The FY 1988 budget includes \$18M for contingency medical facilities that will support US NATO-assigned forces during contingencies and in wartime and a request for essential facilities modernization in support of modern weapon system deployments, including some \$106M for hardstands and tactical equipment shops. Facilities modernization has increased overall US combat capabilities in Europe. Improved working and living conditions for our troops continues to be a high priority goal. The FY 1989 program reflects continued emphasis on these improvements as well as providing for essential operational facilities that are not eligible for NATO funding.

The NATO infrastructure program is a major source of funds for construction of US wartime facilities in Europe. The NATO alliance agreed in 1984 to support significant increases in infrastructure funding for 1985 through 1990. This was a 56 percent real increase over the previous 1980 to 1984 funding period. The increased funding level will permit construction of the majority of the minimum essential facilities and make major progress in providing essential operation facilities and hardened aircraft shelters for US reinforcing aircraft. Significant progress will also be made in providing equipment and ammunition storage for US land reinforcements and storage for the US-FRG wartime host-nation agreement.

In Southwest Asia, the objective of military construction programs is to provide a network of facilities supporting pre-positioning of war reserve materials and enhancing the predeployment, staging, and employment of USCENTCOM forces. Airfield improvements and logistic support facilities construction have meaningfully upgraded USCENTCOM's ability to deploy and sustain forces in the region. Congressional support to date has allowed USCENTCOM to make strides in completing enroute support facilities. Increased emphasis is now needed in sup-

porting USCENTCOM's MILCON program to reduce shortfalls in pre-positioning and intermediate staging facilities.

In Northeast Asia, host-nation and US MILCON are continuing to improve POL, munitions, medical storage capabilities, and the working and living conditions for US military personnel. Since its inception in 1979, Japan has funded about \$2.0B under the facilities improvement program and budgeted an additional \$350M for CY 1987. Such funding supported, in part, stationing two F-16 squadrons in Japan as well as other support functions. ROK-funded construction projects will enhance the combat support and survival of US forces deployed to Korea. However, additional MILCON is needed in Korea, Japan, Guam, and the Philippines to maintain readiness in the region.

In Central America, recently completed MILCON has provided a limited capability at two Honduran air bases. Additional air bases in Honduras must be upgraded to improve joint and combined exercise capability. In Panama, MILCON is critical to support soldiers and their families, enhance US air and sea mobility in the region, eliminate longstanding flying safety deficiencies at Howard AFB, and improve production of intelligence. MILCON must be started now to adequately support these missions that are expanding into the 1990s, even as US presence is consolidated into fewer installations.

### **Wartime Host-Nation Support**

Wartime host-nation support (WHNS) provides essential CS/CSS to US forces deployed to foreign countries during time of tension or war. WHNS agreements permit us to avoid allocating US military manpower and materiel to the performance of some support functions. This contributes to risk reduction by permitting the application of US resources to additional warfighting capability. It facilitates risk reduction and in some circumstances offsets US CS/CSS shortfalls. WHNS support is made available through a process of negotiated bilateral agreements and development of detailed joint logistic plans or joint logistic support plans. Assurance of this support through bilateral agreements enhances sustainability of combat forces. SACEUR's Rapid Reinforcement Plan is enhanced by WHNS through time reductions deploying CS/CSS support. WHNS provides immediate in-place CS/CSS capabilities, thereby allowing additional combat forces to reinforce Europe prior to the arrival of follow-on US force structure CS/CSS units. Progress continues as the detailed

arrangements contained in the joint support plans are further refined with NATO allies. In the Pacific, Korea provides vital support. WHNS operations provide civilian and military augmentation forces and logistic resources to support its wartime mission. Japan provides extensive peacetime support in the area of facilities, land, labor, and exemptions for claims and taxes. The 1978 guidelines for defense cooperation provide for conducting studies that could, in the future, result in WHNS agreements. However, the guidelines state the conclusions of these studies would not place either government under obligation. Thus, formal binding agreements would not be possible until emergency legislation is enacted by Japan. Additionally, recent legislation has allowed expanded special acquisition and cross-servicing arrangements under the NATO Mutual Support Act. That new authority is being implemented on a bilateral basis with designated countries enabling us to improve warfighting potential concurrent with reducing our own service support requirements.

### **Medical Support**

Shortfalls continue to exist in US medical support capabilities; however, significant progress has been made to narrow the gap between capabilities and requirements. If US forces were simultaneously engaged in Western Europe, Southeast Asia, and Northeast Asia, the Services could provide a significant number of beds to meet theater evacuation policy. However, this is based solely on a conventional (no biological warfare/chemical warfare) conflict and availability of necessary casualty evacuation resources. Current programs fund 4,700 beds in FY 1989 and 11,040 beds in FY 1990. Deployable medical systems are required to ensure acceptable medical care for theater combat forces. Active solicitation of WHNS will be continued to support wartime bed capabilities.

### **Environmental Support**

Force commanders require accurate and timely environmental information in order to fully exploit military force capabilities. Congress must continue to fund military space-based weather and environmental support programs that maintain the readiness of combat force multipliers such as the Air Force's Automated Weather Distribution System (AWDS), which will support both Air Force and Army combat forces. One program that will provide significantly improved environmental and oceanographic information to US Naval forces is the Navy Remote Ocean Sensing System (N-ROSS), currently under development by the Navy.

### **Intelligence**

Access to accurate, timely intelligence is essential for the NCA, Joint Chiefs of Staff, and military commanders to effect timely political and military decisions. Intelligence provides decisionmakers with assessments of enemy forces, capabilities, and probable courses of action. Expansion and continued modernization of intelligence capabilities, particularly HUMINT, is essential for present and future coverage.

### **Reconnaissance Systems**

The US reconnaissance program provides capabilities to meet many peacetime and wartime information collection requirements. Reconnaissance resources consist of strategic, tactical standoff, and penetration systems. Airbreathing systems are flexible and responsive.

Strategic airborne systems include U-2R, SR-71, RC-135, and EP-3E aircraft that carry a variety of sensors. Tactical aircraft stand off systems include the Air Force TR-1, RC-135, and Comfy Levi/Senior Scout; the Army RC-12, RU-10, RU-21, EH-1, EH-60, RV-1D, and OV-1D; the Navy EP-3E, EA-3B, and EA-6B; and Marine Corps EA-6B. The only Air Force tactical reconnaissance aircraft used in a penetrating role is the RF-4C with photo, infrared, and tactical electronic reconnaissance capabilities. The Navy uses the F-14 Tactical Air Reconnaissance



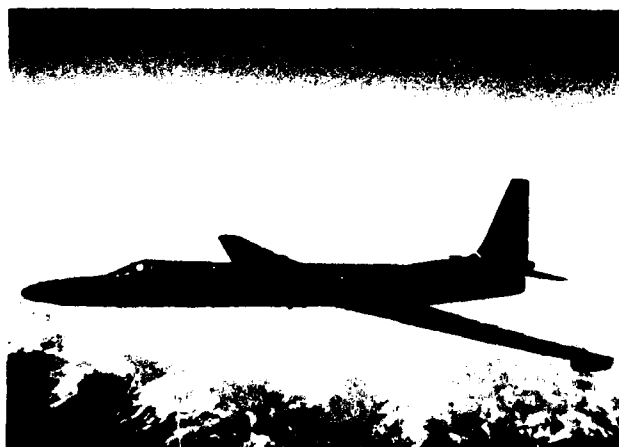
SR-71

Pod System (TARPS), and the Marines employ the RF-4B in a similar role. The Army-Air Force JSTARS, in full-scale development, will provide near-real-time moving target indicator (MTI) on slow-moving ground targets to both the Army and the Air Force. Additionally, the Advanced Synthetic Aperture Radar System (ASARS I) has achieved initial operational capability (IOC). Considerable improvements have been made in U-2R, SR-71, and RC-135 wartime survival response posture. Further improvements are being developed. RF-4 enhancements include an upgrade with electro-optical sensors and a ground terminal program for dissemination of information. Also included are the Navy's conversion and improvement of the EP-3E and the Carrier Battle Group Passive Horizon Extension System and EA-3B replacement program. Converting existing S-3A aircraft to ES-3A configuration will greatly enhance the tactical SIGINT information available to battle group commanders and represents a major upgrade to the aging EA-3B's capabilities.

The P-3 aircraft provides primary ocean surveillance for both surface and subsurface targets. Acoustic ocean surveillance of submarine activity is provided by the tactical and surveillance towed-array sonar systems.

#### **Collection, Processing, and Intelligence Dissemination Systems**

Collecting, processing, and disseminating tactical intelligence will benefit from developments in high-capacity data links, tactical intelligence fusion systems, improved sensors, and related processors; e.g., the USEUCOM Tactical Reconnaissance Sys-



U-2R

tem, Army-Air Force Joint Surveillance and Target Attack Radar System/Ground Station Module (JSTARS/GSM), Army GUARDRAIL/Common Sensor Systems, the Navy Ocean Surveillance Information System Baseline Upgrade, and Intelligence Support for Strike/Amphibious Forces. Adherence to communication/computer systems standards within the Department of Defense Intelligence Information System (DODIIS) community, and Service's programs, will ensure timely reporting, analysis, and dissemination of intelligence information. The Joint Service Imagery Processing System (JSIPS) and Improved GUARDRAIL, for example, will eventually provide tactical commanders the means to collect and assimilate information quickly from national and tactical sensor systems. The Commanders' Tactical Terminal, now under development, will facilitate dissemination.

The Army improved GUARDRAIL V is a collection and reporting system comprised of a transportable ground-based control facility and airborne platforms that carry remotely controlled mission equipment. During peacetime, it is used to support the theater. During combat, it provides the corps commander's capability to see into his area of influence.

The QUICKLOOK II is a system organic to the aerial exploitation battalion of the combat electronic warfare intelligence group at corps level. It consists of the RV-1D MOHAWK aircraft complemented by a ground processing van.

The Navy Battle Group Passive Horizon Extension System, consisting of the ES-3A aircraft (EA-3B replacement) and surface terminals installed in surface vessels, is a tactical system organic to carrier battle groups, battleship battle groups, and amphibious task forces. It is used to support all aspects of Navy's Maritime Strategy, over-the-horizon targeting, antisurface cruise missile defense, air-to-air warfare, and strike operations.

The Army uses a modified version of the AN/APS-94F radar mounted on the OV-1D MOHAWK aircraft to perform aerial mapping on both sides of the aircraft flight path. The imagery is data-linked in near-real-time to ground stations located with tactical units.

#### **Command and Control (C<sup>2</sup>)**

Effective C<sup>2</sup> is essential to successfully employing military forces. C<sup>2</sup> systems are made up of people, fa-

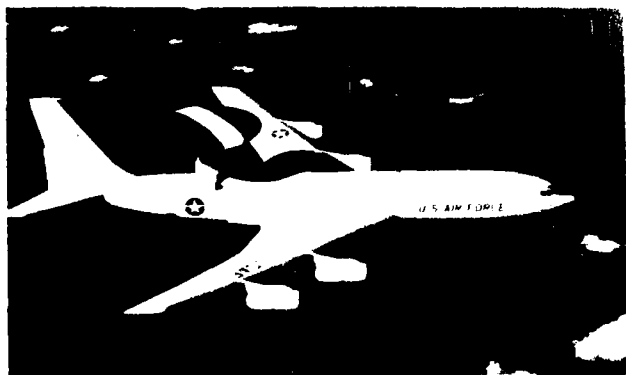
cilities, equipment, procedures, and communications systems designed to assist in planning, directing, and controlling military forces. Improvements in secure, interoperable, and survivable C<sup>2</sup> systems for tactical forces have traditionally taken longer to implement.

C<sup>2</sup> systems interoperability is the key to successfully conducting joint and combined operations. Combined operations cannot be executed without it. Combined C<sup>2</sup> interoperability provides the leverage for forces of the United States and other countries to be an effective counterweight to larger forces of the Soviet Union. Technological and doctrinal changes, particularly in the cryptographic and electronic combat areas, require persistent attention to maintaining interoperability and improving it in the future.

The E-3 AWACS is undergoing modification and enhancement to improve radar sensitivity and ECCM.

Modular control equipment will enhance tactical C<sup>2</sup> flexibility and survivability and will interoperate with joint and allied services. It will integrate tactical surveillance sensor inputs for improved air defense and offensive force execution.

The Joint Tactical Information Distribution System (JTIDS) under development by the Air Force will supplement the existing Navy link and will significantly improve the CINCs' ability to exchange tactical information using digital communications among tactical units. Tactical UHF air communications are also being upgraded with antijam systems, such as HAVE QUICK. HF communications, both voice and data, will be enhanced by the Navy-developed High Frequency Anti-Jam (HFA-J) system. Communications for tactical commanders will be improved by such programs as the Ground Mobile Forces Satellite Communications Program; the fielding of Joint Tactical



E-3A AWACS

Communications Programs, MSE, and SINCGARS; and the implementation of message standards for Joint Interoperability of Tactical Command and Control Systems (JINTACCS). WWMCCS Information System (WIS) will replace existing WWMCCS standard ADP capabilities for worldwide C<sup>2</sup>. WIS will both modernize WWMCCS standard ADP and provide new capabilities that are now possible because of major advances in ADP and communications systems. WIS is the first ADP C<sup>2</sup> system being managed under the acquisition guidance contained in DOD Directive 5000.1 and being developed and implemented using Ada, a DOD standard high-order language.

The Position Location Reporting System (PLRS), a joint Army-Marine Corps C<sup>2</sup> program, will improve the ability of tactical commanders to locate and identify deployed friendly forces. The Army will enhance the capabilities of PLRS by adding a data distribution feature. The enhanced PLRS and the JTIDS make up the components of the Army Data Distribution System (ADDS). JSTARS, which is being developed to improve target acquisition and weapon placement and battle management, will complement PLRS.

Effective Defense-wide communications systems are essential for strategic and tactical forces command and control, as well as their logistic, intelligence, navigation, and meteorological support. The common-user Defense Data Network (DDN) must continue to be strongly supported and funded so potential users can avoid more costly leased connectivity and avail themselves of data connectivity that is needed in the near term. The Defense Communications System (DCS) provides US military forces with worldwide voice, data, and teletype services through networks of government and commercial facilities. An ongoing USCENCOM communications requirements is to extend DCS service into the Southwest Asia (SWA) regions. In response to increased requirements, DCS subsystems are undergoing changes that enhance survivability, expand transmission security, improve interoperability, and increase flexibility in response to increasing requirements and the necessity of replacing aging, nonsupportable equipment. Improvements include increasing the number of switching systems and transmission paths, adding physical and transmission security features, and developing countermeasures to protect network control facilities against computer manipulation.

To expand secure voice, a Secure Voice Improvement Program (SVIP) is being implemented for widespread DOD and civil government use. SVIP will

employ encryption techniques and technology derived from a secure telephone unit developed by the National Security Agency. Interoperability between the DCS and other military secure networks will be accomplished by facilities being developed under the SVIP, the Red Switch Project (RSP), and the Secure Conferencing Project (SCP).

The RSP will provide a C<sup>2</sup> secure voice switching capability to support existing and future requirements of the National Military Command Center (NMCC), Alternate National Military Command Center (AN-MCC), and primary command centers of the unified and specified commands. These switches will significantly improve C<sup>2</sup> communications through rapid interoperability with other DCS and tactical secure voice systems supporting the NMCS worldwide.

The SCP will provide improved, survivable communications for the NCA, Joint Chiefs of Staff, CINCs, and selected subordinate commanders in conjunction with the Jam Resistant Secure Communications Program. Together, the SCP, SVIP, and RSP will replace AUTOSEVOCOM and provide a good quality, user-friendly, interoperable, secure conferencing capability for the 1990s.

Increasing demand for high-quality, high-data-rate communications dictates a requirement for increased capability in jam-resistant UHF and SHF satellite assets. HF radio employing state-of-the-art refinements such as jam-resistance and automatic-link maintenance is currently the best alternative. HF systems are urgently needed to support command and control of nonstrategic nuclear forces and the security of nuclear weapons located at fixed sites and advanced staging areas. Equipment must meet battlefield interoperability requirements and withstand the rigors of modern battle, including EMP, jamming, and the effects of NBC warfare.

### **Electronic Warfare and Command, Control, and Communications Countermeasures (C<sup>3</sup>CM)**

Electronic warfare systems are an integral part of the total capability of US forces to fight and survive on a modern battlefield. EW systems maximize the effectiveness of friendly forces while reducing the enemy capability to use the electromagnetic spectrum. The worldwide threat to US forces is extremely diverse, encompassing the entire range of frequencies from ELF communications to directed-energy weapon developments. Rapid introduction of new hostile weapon systems and incorporation of advanced tech-

nologies significantly stress the EW capability of existing US forces. US EW capabilities must keep pace with this threat by introducing new state-of-the-art systems and improving existing systems as practical. Examples of improvements needed include updating the capabilities of the EF-111 RAVEN aircraft, developing new electronic countermeasures systems for tactical aircraft, and improving the reliability and maintainability of existing and planned EW systems. A comprehensive DOD Electronic Combat Plan was prepared under the direction of the Office of the Assistant Secretary of Defense (Command, Control, Communications and Intelligence) and approved by the Secretary of Defense in March 1987. This plan describes the collective efforts of the Services to prepare and program for US EW missions and provides a roadmap to increase joint and common programs. use. The plan focuses on the programmatic and technological aspects of EW from three mutually supportive perspectives: mission, technology, and resources.

Communications countermeasures are an essential element of modern combat capability. It is a strategy through which US forces destroy, disrupt, or otherwise degrade the enemy's ability to control its forces effectively while protecting friendly C<sup>3</sup> systems. On the modern battlefield, headquarters staff, field, and tactical commanders must emphasize C<sup>3</sup>CM strategy and training to translate existing battlefield resources (men, munitions, and weapon systems) effectively into usable combat power.

### **Joint Perspective**

#### **Role of the Commanders of the Unified and Specified Commands**

The CINCs command the forces assigned to them



EF-111

in both peace and war and have regionally or functionally oriented responsibilities. The combatant commands are designated as either unified or specified. Unified commands are composed of major forces from two or more Services and have a broad continuing mission to plan and, if necessary, to execute military operations in support of US national security objectives. A specified command is one with a broad continuing functional mission and is usually composed of forces from one Service.

The Military Departments are charged with providing forces to the CINCs and supporting those forces. Although the Services are granted responsibility for training and equipping forces, the CINCs now play an expanding role by influencing the DOD resource allocation process. Title 10 mentioned earlier has clarified the responsibilities of the commanders of the unified and specified commands and ensured that their authority is fully commensurate with the responsibility for accomplishing their assigned missions. (See the expanded discussion of military organization and command in Chapter VI.) The Joint Chiefs of Staff, Services, and CINCs continue to implement several joint programs with the goal of increased Service interoperability, improved joint warfighting capability, and more efficient management of limited resources.

#### **United States Transportation Command**

On 1 July 1987, the United States Transportation Command (USTRANSCOM) was established in response to strategic mobility deficiencies. It is a functional unified command that will provide global land, air, and sea transportation to meet national security needs. USTRANSCOM has three components, the Army Military Traffic Management Command, the Air Force Military Airlift Command, and the Navy Military Sealift Command. The Joint Deployment Agency has been disestablished and its assets, mission, and functions integrated into the USTRANSCOM headquarters.

USTRANSCOM's mission is to support the other unified and specified commands by managing the deployment and redeployment of forces and materiel and by providing common-user strategic transportation forces in times of crisis or in the event of war. USCINCTrans will exercise authority as the primary CINC responsible for all transportation-oriented elements of strategic mobility planning and over participating members of the Joint Deployment Community concerning those actions that are necessary to

accomplish this responsibility. USCINCTrans maintains operational command of assigned component forces while each component command exercises operational control over its forces.

USTRANSCOM offers several advantages over previous methods of managing mobility and deployment. It will provide flexibility and rapid decisionmaking by shortening the lines of communications to the NCA. Also, consolidating all the military transportation functions of strategic mobility maximizes allocation of resources and eliminates redundancy and shortfalls. In addition, USTRANSCOM will link all transportation-oriented ADP systems into a single user-oriented deployment system. Lastly, it will function as a single point of contact for training and advising the joint deployment community.

As USTRANSCOM continues to develop, it must address issues such as defining the command's peacetime responsibilities and establishing procedures for transitioning from peacetime to war. Some peacetime responsibilities currently envisioned would include collecting and then analyzing unit-move data, tasking component commands with user requirements, and optimizing transportation modes. As for shifting from a peacetime to wartime footing, the command has already begun to study means for effecting a smooth and rapid transition. USTRANSCOM is addressing these and similar issues as it strives toward fully operational status scheduled for 1 October 1988.

#### **United States Special Operations Command**

On 1 October 1986, the President signed the Goldwater-Nichols Department of Defense Reorganization Act of 1986. In addition, the President signed the DOD Authorization Act and the continuing resolutions for FY 1987. These amended the Goldwater-Nichols Act to provide a structure for management and command and control of SOF and LIC.

The United States Special Operations Command (USSOCOM) was established on 16 April 1986 to unify all CONUS-based SOF under one commander responsible for preparing SOF to carry out assigned missions. The command consists of an Army, Navy, and Air Force Component which has about 40,000 active and reserve personnel organized to accomplish the following missions:

- Provide combat ready SOF to rapidly reinforce the other unified commands.



- Plan and conduct selected special operations as directed by the NCA.
- Develop joint doctrine, tactics, techniques, and procedures for special operations.
- Conduct specialized courses of instruction for all SOF.
- Conduct training of all assigned forces and ensure interoperability for any level of conflict.
- Monitor the preparedness of SOF assigned to the other unified commands.
- Develop and acquire unique special operations materiel, supplies, and services.
- Consolidate and submit program budget proposals for major force program category 11.

Since activation in April, USSOCOM has been working diligently to bring the command to a fully operational status as evidenced by initiation of the Joint Advanced Special Operations Radio System (JSORS) that will assist all Service operational detachments by providing a standard, state-of-the-art communications radio system. The Congressional legislation that established the command contained provisions that will significantly enhance the authority of a commander in matters relating to special operations. Actions to fully implement all provisions are ongoing and will take time to complete. In the interim the command is working closely with the Services, other CINCs, and components to map out a smooth transition for assuming all legislated special operations responsibilities.

#### **Forces Command**

Forces Command (FORSCOM) was established 26 July 1987 as the nation's newest combatant command. FORSCOM is a specified command. *Organized functionally*, FORSCOM's primary mission is to organize, train, and maintain the nation's strategic reserve of Army forces and, on order, mobilize and deploy these forces in support of the regional unified combatant commanders. Additionally, FORSCOM provides for the land defense of CONUS, including protecting key assets, coordinating with Canada for combined protection of North America, and providing military support to civil defense in the event of strategic nuclear warfare. FORSCOM also sponsors JCS-coordinated joint training exercises of CONUS-based forces. In addition to its missions as a specified command, FORSCOM is also a Major Army Command (MACOM) of the Department of

the Army and is the Army Component Command (for planning purposes) for USCINCLANT. In its MACOM role, FORSCOM performs missions dealing with organizing, training, and supporting assigned Army forces at the direction of the Department of the Army. In its ARLANT component role, FORSCOM prepares plans for the employing and supporting of Army forces under USLANTCOM operational and concept plans.

FORSCOM is the largest command in the Department of Defense. The active component of FORSCOM consists of 271,000 soldiers. FORSCOM's Army Reserve strength stands at 288,000 soldiers and, when mobilized, the Army National Guard's 450,000 soldiers also become a part of FORSCOM. In addition, there are 55,000 civilians in FORSCOM.

FORSCOM's mission and functions are wide and diversified. The command plays a key role in the national strategic by projecting ground combat power to contingency areas and reinforcing forward-deployed forces. Its mission to protect the security of CONUS is essential to successfully deploying and sustaining our overseas forces and supporting our allies.

#### **Joint Doctrine**

Military doctrine provides the fundamental principles by which forces of two or more Services are employed in coordinated action toward a common objective. Joint doctrine is promulgated by the Joint Chiefs of Staff and provides a framework for developing solutions to enhance the warfighting capabilities of the CINCs. Joint doctrine review and development continue under the guidelines established by the Joint Staff. The process, *The Joint Doctrine Master Plan (JDMP)*, will spearhead CINC warfighting doctrine development and enable the Chairman JCS, to meet his responsibility for "...developing doctrine for the joint employment of the Armed Forces," specified in the DoD Reorganization Act of 1986. The JDMP is the most comprehensive joint doctrine initiative ever undertaken by the Joint Chiefs of Staff. This plan rests upon its ability to perform the following pillars:

- Identify joint doctrine voids which adversely affect the combat effectiveness of joint forces and implement a comprehensive program to initiate needed joint doctrine to fill these voids.
- Bring all joint doctrine previously approved by all four Services under the JCS Publication system.
- Review the JCS Publication System to



separate joint doctrine and procedures publications from other administrative publications and organize them into a systematic hierarchy that clearly links doctrine to procedures under a single capstone manual.

The Joint Staff has addressed all of the pillars. A doctrine voids list has been established with proposed developing Services or agencies identified. A joint doctrine hierarchy of publication has been established. Currently, an implementation plan is being staffed which will establish uniform policy for initiating, validating, developing, evaluating, approving, and maintaining joint doctrine and joint tactics, techniques, and procedures (TTP).

The common threat of all the joint doctrine/TTP initiatives has been the recognition that the interoperability of warfighting forces is essential to conducting successful joint operations. By focusing on interoperability, the Joint Staff and the Services will ensure payoffs to the CINCs through more efficient force utilization and increased combat capability.

#### **Combined Doctrine**

Since the United States is a member of many military alliances, all Services must be prepared to integrate their forces with those of US allies during times of conflict. Combined doctrine has been developed through allied agencies to improve rationalization, standardization, and interoperability (RSI). The Joint Staff has developed procedures to provide a single point of contact within JCS for harmonizing operational and terminology RSI efforts involving multinational standardization developments and implementation. Although this area has improved over the last several years, much remains to be done. The European theater remains the focus of this activity, with NATO agencies working to meet the challenge of standardization among the member nations. In the Pacific theater, bilateral relationships form the basis for integrating US and allied capabilities. Other non-theater specific fora involved in developing combined doctrine include the Air Standardization Coordination Committee (ASCC) composed of air forces of Australia, Canada, New Zealand, United Kingdom, and USAF and USN; and the American, British,

Canadian, Australian (ABC) Armies. Continuing efforts are producing significant results as US Pacific allies enhance their military capabilities.

#### **JCS Role in Acquisition Management**

A major objective of the Defense Reorganization Act of 1986 and National Security Decision Directive 219 is to improve the manner in which force and system requirements are identified, justified, analyzed, and satisfied. The Secretary of Defense has approved the appointment of the Vice Chairman, Joint Chiefs of Staff, to several key positions from which to direct and influence acquisition matters. The Vice Chairman, Joint Chiefs of Staff, works to reduce unnecessary duplication of systems capabilities and to enhance interoperability based on exercise and operations lessons learned. Acting as the CINCs' spokesman on acquisition and requirements matters, he sponsors requirements for consideration or validation in conjunction with the normal CINC/component/Service processes. In this context he balances CINC theater needs against the tendency to proliferate theater specific weapon systems.

The Vice Chairman also heads the Joint Requirements Oversight Council (JROC). In this role, he focuses JROC deliberations to affect concepts as they develop rather than adjust programs as they are executed. He also acts as the link between the JROC and the Defense Acquisition Board. As Vice Chairman, Defense Acquisition Board, he provides advice and assistance concerning military requirements and priorities and the feasibility of common-use or joint solutions to military requirements. The combination of the Defense Acquisition Board and the JROC ensures that joint requirements are identified and acted upon, and the scarce DOD resources are used in the most economic manner.

Over ten percent of the Joint Staff directly or indirectly supports the Vice Chairman, Joint Chiefs of Staff, in his acquisition responsibilities. They have made substantial headway in creating the necessary relationships, processes, documentation, and directives required for the Joint Chiefs of Staff to be an effective and influential participant in the defense acquisition process.

## CHAPTER VI. TOPICS OF SPECIAL INTEREST

### INTRODUCTION

The preceding chapters addressed US security requirements and major military forces. This chapter outlines the status of arms reduction talks and discusses military space activities, DOD warfighting organization, defense manpower, international terrorism, European troop strength, and DOD support to drug interdiction.

### ARMS NEGOTIATIONS

The United States participates in bilateral and multilateral negotiations on arms control to protect US and allied security interests, build global stability, and promote favorable international relationships. These negotiations are an integral part of the US national security strategy. Equitable and verifiable arms reduction agreements can contribute to security and stability at reduced force levels. However, arms control cannot substitute for necessary force modernization, nor can it guarantee reduced defense spending. Arms control and force modernization must be mutually reinforcing elements of US national security strategy if they are to contribute to enhancing stability and deterrence.

In order to determine whether arms control agreements are militarily in the US national interest, the Joint Chiefs of Staff assess quantitative and qualitative factors, analyze static and dynamic balances, and apply military judgments based upon knowledge and experience. The outcome weighs US and Soviet military capabilities and the military risk to the United States projected to exist with and without the arms control agreement under consideration. The process is designed to ensure that the agreement is equitable and verifiable, that it will permit the required US force structure, that military objectives in support of broader national goals can be achieved, and that the United States is not placed at a disadvantage.

### Nuclear and Space Talks

In January 1985, the United States and the Soviet Union jointly announced agreement to begin a new set of negotiations on a complex series of questions concerning strategic and intermediate-range nuclear offensive arms and defense and space arms. The purpose of these Nuclear and Space Talks (NST), which commenced in Geneva in March 1985, is to reach agreements aimed at significantly reducing nuclear arms and strengthening strategic stability.

The United States and USSR have signed an

agreement in the INF negotiations. Major differences separate them in the negotiations on strategic arms reductions and defense and space arms. Within the limits permitted by confidentiality of negotiations, the proposals made by the two sides are outlined in the following paragraphs.

### Strategic Arms

The primary objective of the United States in the negotiating group on strategic arms is to achieve a stable and verifiable balance at significantly reduced levels of nuclear forces. The US approach to strategic arms reductions seeks in particular to reduce the first-strike capability posed by Soviet ICBMs capable of carrying large numbers of MIRVs. The United States also seeks to ensure a strategic balance through a combination of force modernization and deep, equitable, verifiable arms reductions.

Both sides have tabled draft treaty texts in the Geneva negotiations, the United States on 8 May 1987 and the USSR on 31 July 1987. The Soviet draft treaty did not reflect any change in Soviet positions on important issues. The US draft treaty calls for reductions to no more than 1600 deployed ICBMs, SLBMs, and heavy bombers. The Soviet draft treaty calls for reductions to no more than 1600 deployed *launchers* of ICBMs and SLBMs, and heavy bombers. Both draft treaties call for reductions to no more than 6000 accountable weapons on those systems. For the first time the Soviets have offered in a draft treaty text to reduce their heavy ICBM force by 50 percent, to no more than 154 launchers of SS-18 ICBMs with no more than 1540 reentry vehicles. In addition, an important compromise appears to have been reached on how to count heavy bomber weapons, i.e., nuclear bombs and short-range air-to-surface missiles.

Unfortunately, the Soviet proposals still attempt to hold Strategic Arms Reduction (START) hostage to Soviet insistence on increasing the testing and research limitations of the ABM Treaty in order to restrict the SDI program.

### Intermediate-Range Nuclear Forces

On 8 December 1987, President Reagan and General Secretary Gorbachev signed the INF Treaty at the Washington, D.C. Summit. The Treaty calls for the elimination of all ground-launched ballistic and cruise missiles of the US and the USSR capable of ranges between 500 and 5500 kilometers.

In connection with the INF Treaty, it is vital to maintain the momentum of existing efforts, as well as to consider force improvements that will be required to maintain deterrence and stability in Europe as US PERSHING II and ground-launched cruise missiles are withdrawn and eliminated. This is a natural outcome of the judgment that arms control and force modernization must be mutually reinforcing elements of our national security strategy in order to enhance stability and deterrence.

### **Defense and Space**

The US goal in these negotiations is to explore a joint transition to greater reliance on effective defenses for strategic deterrence. The stated Soviet goal is to "strengthen" (i.e., make more restrictive) the ABM Treaty; however, their demonstrated goal is to constrain the US SDI.

The most recent US proposal offers a mutual commitment not to withdraw from the ABM Treaty through 1994 for the purpose of deploying operational strategic defenses not permitted by the ABM Treaty. However, the US proposal preserves the right to withdraw from the proposed commitment for reasons of supreme national interests or material breach of this commitment or the START or ABM Treaty. During the nonwithdrawal period both sides would strictly observe all provisions of the ABM Treaty while continuing research, development, and testing, which are permitted by the Treaty. This commitment would be contingent upon implementation of fifty percent reductions in strategic offensive arms under a START agreement. After 1994, either side would be free to deploy advanced strategic defenses unless both sides agreed otherwise.

To enhance predictability in the area of strategic defenses, the US has also proposed an annual exchange of data on planned strategic defense activities, reciprocal briefings on respective strategic defense efforts, visits to associated research facilities, and establishment of procedures for reciprocal observation of strategic defense testing.

The most recent Soviet proposal, made at the 15-17 September 1987 Shultz-Shevardnadze Ministerial Meeting in Washington, is that the United States and the USSR agree not to withdraw for any reason from the ABM Treaty for ten years. The Soviets offered two possible regimes that would apply during the 10-year period. Under one approach, the United States and the USSR would agree on a list of devices and threshold values for critical parameters for those devices. Devices with parameters lower than the

threshold values could be put into space for any purpose, whether ABM-related or not. Other research on space-based ABM systems would be restricted to laboratories on earth. Under the other approach, during the 10-year nonwithdrawal period, the United States and the USSR would agree to strictly abide by the ABM Treaty as it was signed and ratified in 1972.

### **Other Nuclear Arms Control Actions**

In 1986, in other bilateral nuclear arms control actions with the Soviet Union, the United States participated in two separate sets of expert-level meetings, one on Nuclear Risk Reduction Centers and another on nuclear testing.

### **Mutual and Balanced Force Reductions**

The longstanding negotiations on MBFR between NATO and the Warsaw Pact have the objective of achieving a more stable balance of forces at lower levels between East and West, and strengthening peace and security in Europe through mutual reductions of forces and armaments with undiminished security for both alliances. Both sides have submitted draft treaties, but they remain far apart on the fundamental issue of verification. In December 1985, the United States and its allies proposed a modification to the 1982 Western draft treaty to break the impasse on initial force levels. This proposal would require exchanging information on forces remaining after reduction in a first-phase, time-limited agreement. The West, which dropped its longstanding requirement for data agreement on Eastern Forces, continues to press for a strengthened verification package.

The East's counterproposal, presented in February 1986, was essentially a repackaging of previous Warsaw Pact proposals and was considered totally inadequate by NATO. The most significant problem with the latest Eastern proposal is the absence of substantive provisions to satisfy Western concerns about verification of residual forces, particularly in light of the Western concession to defer agreement on data prior to reductions. Eastern negotiators also continue to offer a reductions scheme which posits US-USSR troop withdrawals as a "mutual example" to symbolize progress, without post-reduction limitations or verification measures.

### **Conference on Disarmament in Europe**

The Conference on Confidence and Security Building Measures and Disarmament in Europe, commonly known as the Conference on Disarmament in Europe (CDE), began in January 1984 and concluded in September 1986. The conference was mandated by the 35 participating states of the CSCE to develop

a set of confidence and security building measures (CSBMs) designed to reduce the risk of military confrontation in Europe due to miscalculation or distrust. The Stockholm CDE Agreement preserved basic Western principles and laid the foundation upon which further progress in the process of openness can be achieved. Of particular note, the Warsaw Pact has for the first time focused on the standing ground forces in Europe and accepted on-site inspection with no right of refusal. Additionally, the Vienna CSCE meeting will direct the reconvening of the CDE to continue developing CSBMs for continued confidence building. The Vienna CSCE follow-up meeting, which began in November 1986, is reviewing implementation of the provisions of the Stockholm Document as part of an overall assessment of the CSCE process. In late August 1987, the United States was the first nation to implement the inspection provision by inspecting a Soviet exercise in the Belorussian Military District near Minsk. The Soviets cooperated fully and the inspection was successful in ascertaining the nonthreatening nature of the Soviet activity. In October 1987, the USSR reciprocated by performing a challenge inspection of US troops taking part in exercise "DISPLAY DETERMINATION" in Turkey and the US FTX "IRON EAGLE" in the Federal Republic of Germany. The GDR inspected the FRG FTX "SICHERE FESTUNG" in November 1987 and the UK inspected the GDR FTX (unnamed) in the GDR in September 1987.

### **Conventional Stability in Europe**

Negotiations between East and West on a new conventional stability mandate are underway. Participating states include the 16 NATO and 7 Warsaw Pact nations that meet in Vienna in a forum called the Group of 23. These negotiations are based on both Soviet General Secretary Gorbachev's expressed readiness to pursue conventional force reductions from the Atlantic to the Urals, and NATO's Halifax Statement, which called for bold new steps in conventional arms control. The East tabled its basic elements for a mandate in June 1987. The NATO nations, coordinating their efforts through a High-Level Task Force (HLTF), tabled a Western mandate proposal in July 1987 to the Group of 23 in Vienna. East-West points of contention include the scope and area of application, the participation of the neutral and nonaligned nations, the exclusion of nuclear weapons, and the discussion of military doctrine. Negotiations to reconcile these positions and facilitate an East-West mandate for conventional stability have begun in Vienna. Conceptual development of a substantive Western proposal for conventional stability is ongoing in NATO capitals.

### **Other Multilateral Negotiations**

Representatives of the Joint Chiefs of Staff participate in other multilateral forums, including the 40-nation Conference on Disarmament (CD). Achieving a comprehensive nuclear test ban (CTB) and a comprehensive chemical weapons (CW) ban are among the CD agenda items. Concerning a CTB and as a result of the suspension of negotiations among the United States, United Kingdom, and Soviet Union on such a treaty, some members favor negotiating a comprehensive nuclear test ban within the CD. However, the US position is that such testing remains essential to maintaining a credible nuclear deterrent. Therefore, while a CTB remains a long-term goal of the United States, such a ban must be viewed in the context of a time when we do not need to depend on nuclear deterrence to ensure international security and stability, and when we have achieved broad, deep, verifiable arms reductions; substantially improved verification capabilities; expanded confidence-building measures; and reached balance in conventional forces.

In 1984, at the Conference on Disarmament, the United States tabled a draft treaty for a comprehensive and verifiable CW ban. In light of recent instances of Soviet or Soviet-surrogate violations of the Geneva Protocol of 1925 and the Biological and Toxin Weapons Convention of 1972, and low confidence in the US ability to verify compliance with a CW convention, a stringent verification provision was written into the US draft CW Treaty. This provision allows for mandatory challenge on-site inspections at any time or place. Between 1984 and 1987, little progress was made in negotiations for a CW Treaty. The Soviets and other nations considered the verification and compliance provisions of the US draft treaty to be too intrusive and therefore unacceptable. With the prospect of US CW modernization beginning in December 1987, the Soviets asserted that they want to complete a CW Convention as soon as possible. The Soviets have acknowledged that they possess CW. General Secretary Gorbachev announced on 10 April 1987 that the Soviet Union had terminated CW production and that the Soviets are constructing a special plant to destroy CW weapons. The Soviets have abandoned their longstanding position on challenge inspection and now are closer in principle to the US position. Many controversial issues remain to be worked out in areas such as: destruction schedules for CW stocks and CW production facilities, challenge inspection procedures, CW production facility conversion, and monitoring the chemical industry to preclude CW production. Yet to be resolved are the international organizational

structure for overseeing a treaty, procedures for its implementation, and a scheme for assessing the costs associated with that implementation. An overriding concern remains the structuring of an effective verification regime, a concern that will be very difficult to assuage.

## US SPACE POLICY

Recognizing the increasing role of space in supporting national interests, the United States has developed a comprehensive space policy for civil, intelligence, and military uses. Unexpected events have occurred. Presidential decisions have modified or amplified certain policy tenets, and new space programs have been established. Consequently, a complete review of this policy is under way to consolidate policies that have evolved and to incorporate necessary revisions to provide a framework and guide for decisions on US posture in space for the foreseeable future.

## MILITARY SPACE ACTIVITIES

Pursuant to the events and opportunities that have caused the need for a revision of the national space policy, the DOD space policy was recently revised. The occurrences that warrant the adjustment include the SDI, revision of the nation's launch philosophy, the initial successful testing of the ASAT system against an object in space, formation of unified and Service commands for space, emergence of commercial space enterprise opportunities, initiation of a manned space station program with international involvement, increasing commitment on the part of other nations toward space exploitation, and continued progress of Soviet space programs in both military and scientific areas.

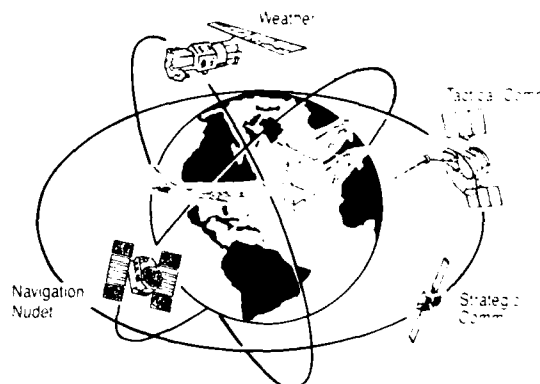
From a military viewpoint, space is recognized as being a medium within which the conduct of military operations in support of US national security can take place just as on land, at sea, and in the atmosphere. Similarly, space is a medium from which military space functions of space support, force enhancement, space control, and force application can be performed (see Figure VI-1).

## Space Control

Space control activities ensure freedom of action in space for friendly forces while, when directed, denying it to the enemy. The Department of Defense will develop and deploy a comprehensive space control capability with initial operations at the earliest possible date. Both the United States and the Soviet Union depend on space systems for military operational support. In the past, such support has

been primarily in the area of information gathering and communications. The United States must be able to counter or nullify the effectiveness of enemy space systems and ensure that US space assets can function in a hostile environment.

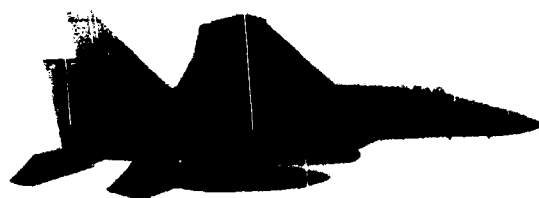
## Military Employment of Space Assets



As of 30 September 1987

FIGURE VI-1

A key element of space control is the requirement for a US ASAT capability. Today, when the Soviets enjoy a monopoly on ASAT capabilities, the United States has no capability to respond-in-kind to a Soviet ASAT attack on our key space systems. In addition, this lack of an ASAT capability provides the Soviets with a sanctuary in space from which to direct hostile activities against US and allied ground and naval forces. This asymmetry is a serious gap in our deterrent capability.



F-15 WITH ASAT

The miniature vehicle (MV) ASAT, currently under development, is the only near-term option for redressing this destabilizing asymmetry. It will pro-

vide the United States with the capability to attack Soviet satellites in low-earth orbits. To date, due to Congressionally-imposed testing restrictions we have been able to test this system just once against an object in space—a test that was fully successful. To demonstrate to our adversaries, as well as ourselves that we have a real capability, we must be able to conduct additional tests.

### **Force Application**

Force application is comprised of combat operations conducted from space with the objectives of strategic defense and power projection from space.

### **Force Enhancement**

Force enhancement activities include communications, surveillance, navigation and positioning, meteorology, oceanography, mapping, and search and rescue.

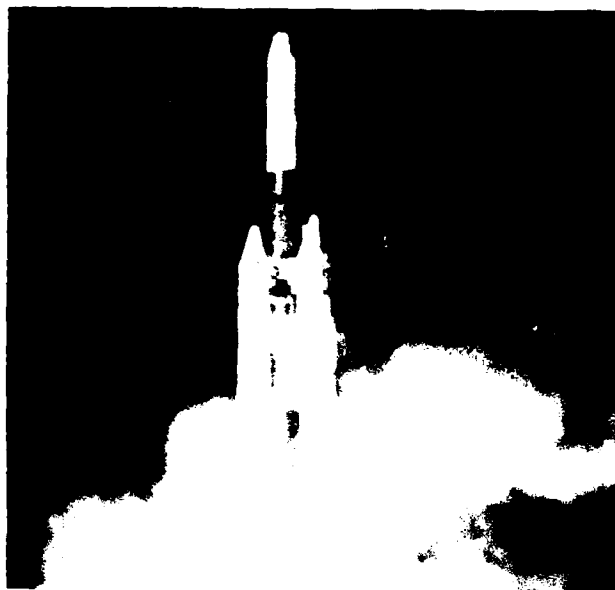
Systems now operational or under development to perform these activities include Milstar, Fleet Satellite Communications System (FLTSATCOM), Air Force Satellite Communications System (AFSATCOM), Defense Satellite Communications System, Defense Meteorological Satellite Program, Navy Remote Ocean Sensing System, Global Positioning System, Nuclear Detonation Detection System, and other systems.

### **Space Support**

Space support activities involve operations associated with launching and deploying space vehicles, maintaining and sustaining space vehicles while in orbit, and recovering space vehicles, if required. Centers being developed and improved to support such missions include ground facilities for the Satellite Control Network and its associated ground stations. To overcome dependence on foreign-based ground stations, the United States is developing the capability to process information onboard spacecraft and then perform the necessary data relay. Systems being developed to deploy satellites include new upper stages and expendable launch vehicles. Systems used to transfer satellites from a low orbit to high orbit include the Inertial Upper Stage (IUS), the Payload Assist Module (PAM), and the expendable launch vehicle (ELV) version of the CENTAUR Upper Stage.

The United States is actively pursuing an assured launch capability with the TITAN-34D and the Space Transportation System (STS). This capability calls for developing TITAN-IV ELVs for shuttle-class payloads, using the DELTA II as a medium launch vehicle, and

refurbishing TITAN II ICBMs for small and medium-sized payloads. These expendable launch boosters, along with the STS, will provide a balanced mix of launch vehicles ensuring access to space to support the mission needs of national security. At Vandenberg Air Force Base, the Shuttle Launch Complex was officially dedicated in October 1985. Because of the CHALLENGER loss, Vandenberg shuttle facilities have been placed in an operational caretaker status.



**TITAN 34D/IUS LAUNCH VEHICLE**

### **Soviet Space Efforts**

The Soviets continue their vigorous space efforts. Their space program is a vital part of Soviet military operations and is integrated into the Soviet warfighting capability. Soviet launch and space systems are operationally responsive to military requirements. Reconnaissance satellite systems, ELINT, and radar ocean reconnaissance can be launched and operational in hours vice months for the United States. The Soviets' annual space budget growth rate, exceeding their overall military budget growth rate in recent years, is an important indicator of the importance Soviets place on military space support. Growth in the Soviet space budget is expected to continue at least the next 5 years.

The Soviets have sustained a high launch rate of approximately 100 launches per year since 1970. During the past few years, significant logistic problems have been encountered, importantly, a significant reduction in the capability to operate the launch facilities.

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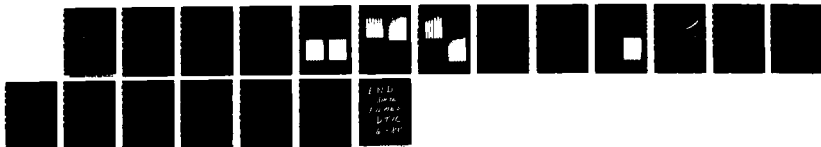
UNITED STATES MILITARY POSTURE FOR FY 1989(U) JOINT  
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differences between the United States and the Soviet Union can be explained partially by the Soviet need to replace satellites more frequently because of the shorter average mission duration of their satellites. However, the Soviet launch rate also provides a very robust launch and replacement capability in crisis and conflict situations. The Soviets continue to make important technical advances in their satellite programs.

The Soviet Union presently maintains nearly a three-to-one margin over the United States in man-days in space. The new MIR space station will be manned for extended periods, and indeed may begin a permanent manning phase. Research and development, reconnaissance, testing and operation of weapons and sensors, and other military missions could be performed from such stations. The introduction of the Soviet reusable manned orbital shuttle is expected by the late 1980s. The Soviet orbiter is similar to the US STS orbiter first launched in 1981.

In 1987 the Soviet medium lift Space Launch Vehicle, the SL-16, became operational. A future payload could be the predicted manned space plane. Its first stage is used as strap-ons for the new heavy lift vehicle, the SL-X-17, which had a first launch in May 1987. The heavy lift vehicle will support the manned orbital shuttle and other heavy payloads. The Soviets are also continuing to improve their space-based reconnaissance systems.

Some existing Soviet space assets pose a threat to US satellites and ground forces. The Soviet operational co-orbital ASAT interceptor system is designed to engage low-altitude satellites. Additionally, Soviet ABM and ICBM systems have inherent ASAT capabilities and could augment the co-orbital system. Some US satellites may also be vulnerable to interference from jammers or damage from ground-based lasers.

Soviet space systems have application across the spectrum of conflict. They are capable of providing order of battle, warning, target location, and battle damage assessment information. Soviet radar (RORSAT) and electronic intelligence ocean reconnaissance satellites (EORSAT) are capable of transmitting real-time targeting data on large naval vessels to selected deployed forces.

## **MILITARY ORGANIZATION AND COMMAND**

The Joint Staff has undergone reorganization to function better in areas of increasing responsibility.

Three new or reorganized directorates have been incorporated into the Joint Staff. The reorganized Command, Control, and Communications Systems Directorate, J-6, performs the command, control, and communications functions previously performed within the Joint Staff, but not under any specific staff directorate. The newly formed Operational Plans and Interoperability Directorate, J-7, is the focal point for interoperability. This directorate addresses the functions of joint doctrine; joint tactics, techniques, and procedures; joint exercises; and consolidated operational planning. The new Force Structure, Resource, and Assessment Directorate, J-8, has been formed as a focal point for resource and force analysis. This directorate addresses functions previously performed by the Strategic Plans and Resource Analysis Agency, the Joint Analysis Directorate and the Force Development Division of J-5. This reorganized Joint Staff will assist the Chairman, Joint Chiefs of Staff (CJCS), in carrying out his broadened responsibilities.

The Chairman, with the advice of the Joint Chiefs and the CINCs, has completed his review of the missions, responsibilities (including geographic areas), and force structure of the unified combatant commands as required by the Goldwater-Nichols Department of Defense Reorganization Act of 1986. In his review, several changes were made to the existing JCS Pub 2, "Unified Action Armed Forces," and the Unified Command Plan, which after Presidential approval, will improve implementation of the requirements of the DOD Reorganization Act and the President's Blue Ribbon Commission on Defense Management (the Packard Commission).

Broad policy direction to the CINCs will give them greater latitude and full authority to organize assigned forces as necessary to accomplish their missions.

The DOD Reorganization Act of 1986 made numerous modifications to the statutes that govern the Department of Defense. The Department of Defense has taken action to implement the provisions of the law. Although most of the changes have already been implemented, some will take several years to implement fully.

## **Unified And Specified Command Preparedness**

The DOD Reorganization Act directed the Chairman, Joint Chiefs of Staff, to develop a uniform system to evaluate the preparedness of the unified and specified commands to carry out assigned missions.

To this end, the Joint Staff has been working with Service and CINC points of contact to construct such a system.

Operational plans represent the translation of strategic concepts into reality. Therefore, the ability of the CINCs to carry out these plans is the key to the evaluation concept. A commander's annual subjective analysis is a realistic approach to accomplishing the required evaluation. The analysis should include where feasible, supporting, quantifiable information. Incorporating Joint Staff exercise and operational observations, and Service and selected defense agency comments is a realistic approach to accomplishing the required evaluation. The complexity of a major command, especially when discussing its leadership and quality of training, does not lend itself to a solely quantitative measurement.

To accomplish this concept, the Commander's Annual Situation Report (SITREP) will be revised. The baseline for the SITREP will be a specified OPLAN that the command must implement. Commanders may also comment on other plans as desired. Those commanders that must execute a specified OPLAN, as well as supporting other plans, will be required to comment on the other plans being supported. Commanders without a specified OPLAN will comment on their ability to support other plans and on the state of their command's preparedness.

### **Defense Agency Assessment**

The DOD Reorganization Act of 1986 directs the Chairman, Joint Chiefs of Staff, to design and maintain a uniform system to evaluate the readiness of the following agencies to perform with respect to a war or threat to national security:

- Defense Communications Agency.
- Defense Intelligence Agency.
- Defense Logistics Agency.
- Defense Mapping Agency.
- National Security Agency (with respect to combat support functions the agency performs for the Department of Defense).

This evaluation will include a review of the plans of each agency to support the CINCs, a determination of the responsiveness of each agency to support operating forces, and any other recommendations the Chairman considers appropriate.

The ability of each agency to carry out CINC tasks within deliberate plans is key to the evaluation

concept. A Director's Biennial Analysis including where feasible, supporting, quantifiable information, along with the incorporation of Joint Staff exercise and operational observations, and CINC and Service comments, is a realistic approach to accomplishing the required evaluation. The broad nature of the different agencies does not lend itself to a solely quantitative measurement of their readiness.

The basis of the report is the agencies' abilities to support the CINCs in accordance with approved OPLANs. In addition, the Directors are asked to address the improvements that have been made in their abilities to support each of the unified and specified commands during the reporting period, areas of continued concern to the agencies, and the actions taken to alleviate the shortfalls noted.

The agencies' reports will be reviewed and used to compile the Chairman, Joint Chiefs of Staff, report to the Secretary of Defense which will be staffed with the CINCs, Services, Joint Staff, and the agencies themselves prior to submission to the Secretary of Defense.

### **Competitive Strategies**

In his FY 1988 Annual Report to the Congress, Secretary Weinberger established competitive strategies as a major DOD theme to increase the efficiency and effectiveness of defense planning. The competitive strategies goal is to gain and maintain a long-term US military advantage over the Soviet Union by pitting enduring American strengths against enduring Soviet weaknesses. Competitive strategies will provide the Department of Defense with a structured approach to achieve US military objectives, thus forcing the Soviets to recalculate their ability to win a global conflict. Competitive strategies is not new. It is a formalized process that frames the competition between the United States and Soviet Union in a unique way.

Based on a move-countermove concept, competitive strategies enhance deterrence by forcing the Soviets to perform less efficiently. By aligning enduring US strengths against enduring Soviet weaknesses that are exploitable, the United States could create new military capabilities in high leverage areas, thereby gaining significant military advantages. These advantages would, in turn, make significant portions of the Soviet force structure obsolete and force them to make difficult choices. The Soviets might divert more of their resources to defensive systems and operations in lieu of offensive capabilities, or they might decide to forego certain offensive forces be-

cause of their inability to overcome US defensive strength. American strengths feature developing improved operational concepts (including new tactics, training, and doctrine) and employing our traditional superiority in technology and systems, as well as encouraging accelerated development of particularly promising emerging technologies. These initiatives force the Soviets to counter US strengths that would, in turn, be neutralized by a US counter response. A classic example of this move-countermove relationship is US antisubmarine warfare capability. The US ability to avoid Soviet detection because of technologically quieter submarines (a US strength) has forced the Soviets to expend a disproportionate amount of scarce defense resources to cope with the potential US threat to their submarine forces (a Soviet weakness). Another example of competitive strategies is the US goal of penetrating Soviet air defenses, the largest and most expensive system in the world. A modest investment in developing low-observable signatures in fighters and bombers could well force the Soviets to reassess the perceived strength of their homeland defense system. An example of the influence of a new operational concept is the Joint development of Follow-On Forces Attack as part of the overall interdiction mission. By putting the Warsaw Pact's follow-on forces at risk, successful execution of this competitive strategy would threaten the success of the Soviet theater-strategic operation.

The key to implementing the competitive strategies process is the competitive strategies management structure. At the top of this structure is the Competitive Strategies Council. Chaired by the Secretary of Defense, the Council includes the Deputy Secretary of Defense, Chairman, Joint Chiefs of Staff, Service Secretaries and Chiefs of the Services, Under Secretaries of Defense for Acquisition and Policy, and Directors, DIA and NSA. The functions of the Council are to establish the guidelines under which the competitive strategies process is conducted and to monitor strategy development. The Competitive Strategies Steering Group, composed of the Deputy Operations Deputies and representatives from the Joint Staff, Office of the Under Secretary of Defense for Acquisition (OUSD(A)), Program Analysis & Evaluation (PA&E), and OSD Net Assessment, and DIA, identifies competitive strategies candidate areas and provides oversight to the Competitive Strategies Task Forces. Each task force, in turn, is an ad hoc, interagency group that is formed under a specific set of terms of reference to develop competitive strategies for a given scenario. The first task force convened on 20 July 1987 and was tasked to develop competitive strategies for a mid- to high-intensity conflict.

After determining US strengths to exploit predictable Soviet vulnerabilities, the task force will assess the range of plausible Soviet responses and assess US counterresponses. The task force developed four candidate competitive strategies which were sent to the unified and specified commands, Services, Joint Staff and OSD for comments. Following this review, in mid-April, the council will make an implementation decision on the candidate strategies.

## **DEFENSE MANPOWER**

### **Overview**

In recent years, Force modernization and expansion have increased demands on the US military to recruit, train and retain top quality young men and women. The military services must capitalize on past gains in personnel readiness and pursue rigorously defined personnel goals if we are to enhance our military posture, despite the prospect of increasingly challenging and varied missions.

Recruitment and retention problems will be further compounded by congressionally mandated officer strength reductions. The Fiscal Year 1987 DOD Authorization Act mandates officer reductions of 1 percent in FY 1987, another 2 percent in FY 1988, and another 3 percent in FY 1989. This arbitrary reduction will eliminate over 22,000 valid officer positions from the Department of Defense. While the Congress and the country continue to demand more from Department of Defense in terms of its stewardship, the congressional reduction of the DOD leadership corps eliminates a significant part of the capability to fulfill that tasking.

The Department of Defense has complied with the law in FY 1987 but has actually had to reduce officers by 1.7 percent (5259), as the congressional action eliminated planned growth to man new ships and aircraft approved by Congress to come on line in FY 1987. The department will actually reduce an additional 3,088 officers in FY 1988. Reductions beyond this first cut will clearly endanger national defense. In a report submitted to Congress on Officer Requirements, DOD proved that the vast majority of the officers added since 1980 directly support combat or combat-related areas. Further, DOD is continuing its efforts to strengthen the Department's ability to articulate officer requirements.

### **Recruitment**

The Department of Defense continues to be successful in achieving its accession goals (Figure VI-2) despite the continuing decline in the eligible

youth population, an improved economy, and reduced youth unemployment. This success is due to the emphasis the Services have placed on recruiting to attract the number and quality of people they need, and to the incentives, including cash enlistment bonuses and educational benefits, Congress has provided. Although a few high-technology skills remain difficult to fill, the overall quality of recruits is high (Figure VI-3).

## Retention

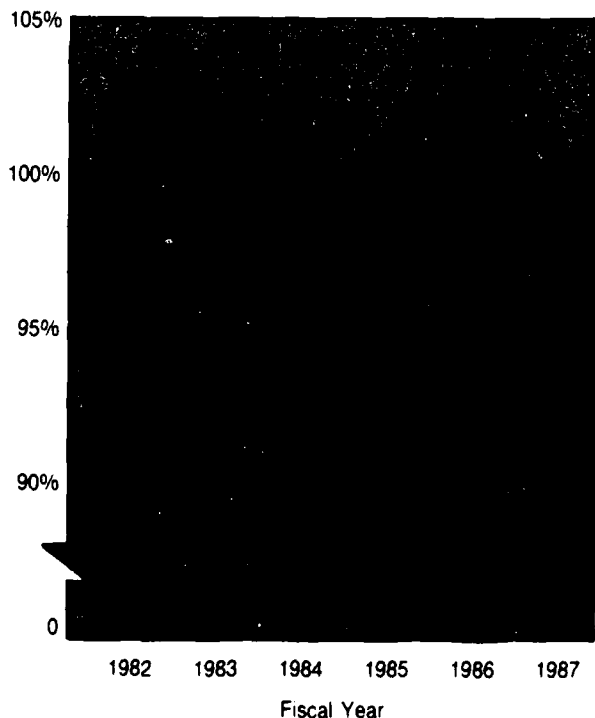
Retention of quality people continues to be good. Even though the Services have pursued policies of reenlistment screening and selective retention, the retention rates have remained high since 1982 (Figure VI-4). The successes in retention are directly related to benefits and quality of life programs that are given the highest priority by each of the Services. A notable exception to the retention success is the large numbers of experienced pilots leaving the Air

Force and Navy to fly with commercial airlines. To maintain the necessary level of readiness requires striving to restore pay comparability and sustaining the package of institutional incentives commensurate with the unique demands associated with military life. Additionally, the effects of recent changes to the military retirement system on recruitment and retention are being monitored closely; every effort should be made to ensure that further erosion of this important compensation element does not occur.

## Reserve Manpower

The importance of the Reserves under the total force concept cannot be overstated. This reliance on a properly manned, trained, and equipped reserve force is a major factor in our ability to deter aggression and respond to any regional crisis. This reserve force is made up of the Selected Reserve (SELRES), Individual Ready Reserve (IRR), Standby Reserve, and Retired Reserve. Areas of interest within

**DOD Recruiting \***  
(% of Objective Achieved)

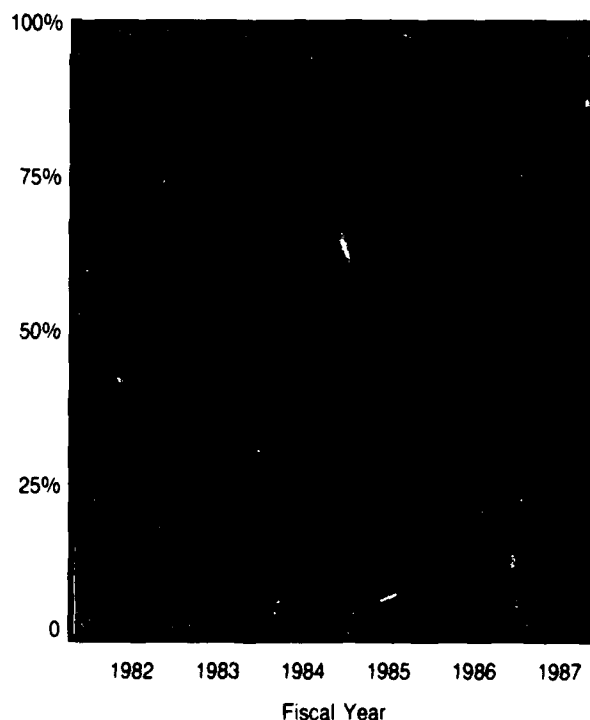


\* All Services (prior and non-prior service)

As of 30 September 1987

**FIGURE VI-2**

**High School Diploma Graduates \***  
(All Services)



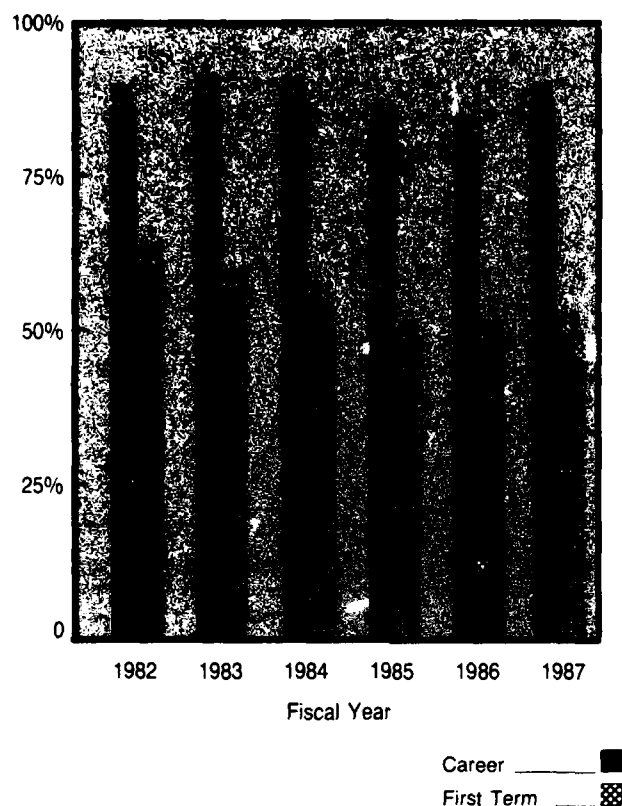
\* Non-prior service

As of 30 September 1987

**FIGURE VI-3**

## DOD Reenlistment Rates

(% of Eligibles)



As of 30 September 1987

FIGURE VI-4

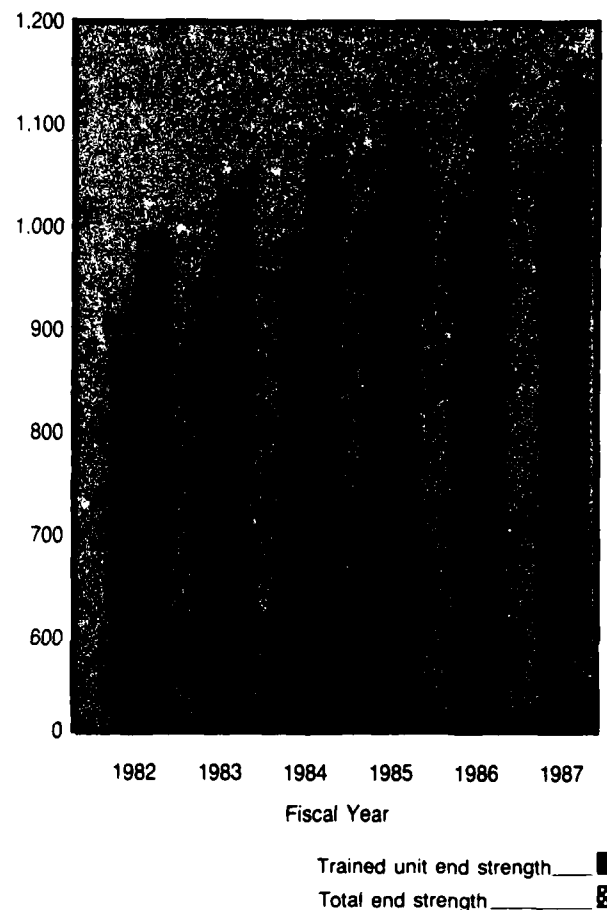
the reserve force that are receiving increased review are retention, increasing full time support, realistic training opportunities, improved responsiveness, and medical personnel manning and readiness.

The SELRES, which has the principal mobilization mission of the Ready Reserve, has enjoyed significant increases with a growth of 30 percent from FY 1980 to FY 1986 (Figure VI-5). During FY 1988, combined Army Reserve and Army National Guard SELRES strength will be 789,000 which is larger than the number of personnel in the Active Army. Essential to increased SELRES strength is a modest increase in full time manning. Active Guard/Reserve (AGR) and Navy TARs are essential to improve unit training and military occupation speciality (MOS) qualification of reservists.

The IRR and Inactive National Guard (ING) consist of trained individual reservists and guardsmen who

## Selected Reserve Manpower

Strength  
in Thousands

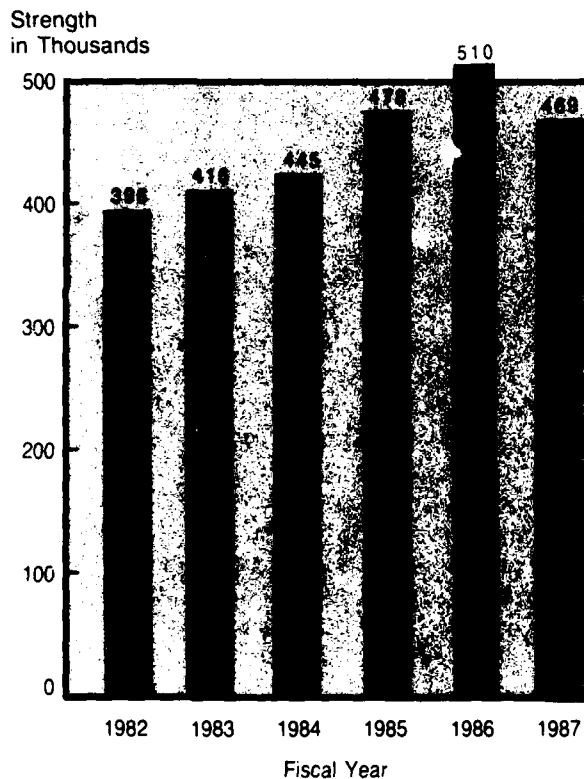


As of 30 September 1987

FIGURE VI-5

will fill units to wartime manning levels and replace initial wartime casualties. Although no manning levels exist for these important manpower resources, requirements for casualty fillers and other wartime scenarios sustain the need for this critical Pretrained Individual Manpower (PIM) resource. A leveling off of the IRR/ING manning has resulted from improved management subsequent to the one day mandatory recall initiated in FY 1987 (Figure VI-6). With this manpower pool now being actively screened and skill degradation evaluated, a greater amount of reliance can be placed on the IRR/ING. Additionally, with the continuing IRR bonus programs and extended military service obligations from 6 to 8 years, further increases will be expected in the IRR strength during the early 1990s.

### Individual Ready Reserve and Inactive National Guard



As of 30 September 1987

FIGURE VI-6

The United States has over 1.6 million military retirees who comprise a trained, experienced, and dedicated pool of individuals available for call to active duty in time of national emergency. There are approximately 800,000 nondisabled retirees between the ages of 40 and 60 on whom DOD management efforts are focused. There are an additional 220,000 retirees between the ages of 60 and 65 who are not managed. The projected FY 1987 cost for our military retirees is \$18.0 billion; the cost in the year 2000 is estimated to be \$40.0 billion.

During mobilization and war, when managerial and leadership ability are in great demand, military retirees are a valuable defense asset. The Defense Department has recognized this value and the Secretary of Defense has issued guidance for development of Service programs for their use.

### Civilian Manpower

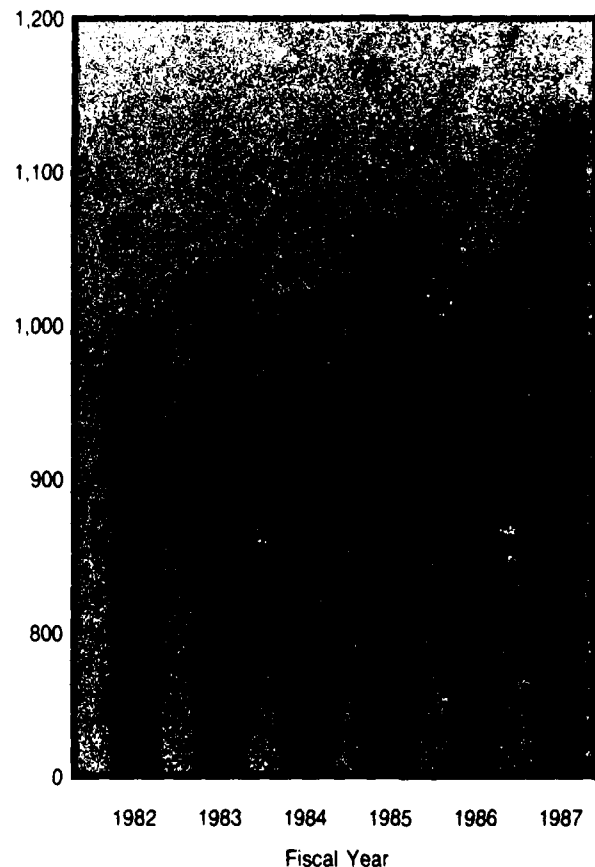
The DOD civilian workforce is a major portion of

the Defense manpower program. Civilians perform in virtually every Department of Defense area with the exception of combat or combat related positions which by law must be filled by active duty or reserve military personnel. In FY 1985, Congress removed DOD civilian end-strength ceilings, allowing the Services to manage the workforce more effectively. In addition, management improvements, including the Commercial Activities Program (OMB A-76), productivity enhancement programs, and efficiency review programs have helped stabilize the growth in the civilian workforce, while improving services and capabilities (Figure VI-7).

The ability of the Department of Defense to attract and retain the required number of civilians with appropriate skills is vital and expected to be challenged

### Direct Hire Civilian Employment

Strength  
in Thousands



As of 30 September 1987

FIGURE VI-7

by an increasingly competitive environment. An aging working population and a shrinking youth market will sharpen already keen competition for individuals who can support our reliance on sophisticated technology. Projected DOD civilian requirements will be concentrated in the same occupations as the private sector. Further, with enactment in 1986 of a new and portable Federal Employees Retirement System, turbulence in the civilian workforce can be expected. Employment and compensation policies in the current Federal Civil Service system, which cover the majority of the US citizens employed by the Department of Defense, are not always adequate to meet DOD requirements. The Civil Service Simplification Act of 1987, legislation submitted by the Office of Personnel Management, proposes elimination of the current procedural impediments. If passed, this act would permit greater productivity by providing more flexibility in setting pay, assigning work and approving promotions for the civilian work force. In the absence of Congressional action on this bill, we should continue to support civilian pay raises that keep pace with increases in the private sector.

### **Contractor Personnel**

Throughout the Department of Defense, there is widespread use of contractor personnel from the private sector to accomplish *noncritical functions*, primarily in the areas of base support. A trend with potential long-term consequences has developed as a result of fiscal and military personnel ceiling constraints. Various commands are relying increasingly on contractor personnel to operate and maintain critical military systems. The Department of Defense has implemented strong review procedures to ensure that the use of contractor personnel does not adversely affect military operations. Taken too far, the reliance on nonmilitary personnel to support critical military operations could jeopardize the effectiveness of these systems during crisis or wartime operations. It could also preclude attaining an adequate technological base for military personnel to support current and future weapon systems. In addition, this trend adversely affects the (CONUS)-to-overseas job ratio, resulting in an unacceptable number of overseas tours for many job specialties. For these reasons, every effort must be made to ensure the appropriate mix of manpower resources to meet wartime defense requirements.

### **Quality of Life**

We must ensure that gains in force quality are protected through strong support for enhanced quality of life programs, improved facilities and housing, and a competitive compensation package for both military

and civilian personnel. These programs have a direct impact on the Services' ability to attract, retain, and maintain quality people.

Since FY 1982, military pay raises have been capped and the result is a pay gap of over 9 percent between the military and private sector. This gap, as measured by the Employment Cost Index, is the largest since the inception of the all-volunteer force. If the Services are going to preserve gains in recent years in recruitment and retention, it is essential that we provide a compensation package that restores pay comparability and keeps pace with pay increases in the private sector. Special and incentive pays continue to play an important role in retention. Special and incentive pay authorized in title 37, United States Code, are designed to attract and retain the necessary numbers and mix of skills and experience to support mission readiness. Special and incentive pays help ensure military compensation is competitive with other employment opportunities, and in some cases, by providing the proper recognition for certain unique duties or conditions of duty. Although the total dollar amount of these pays equates to only 5 percent of the annual amount of basic pay, special and incentive pays are indispensable if the Services are to attract and retain the required numbers of quality career specialists.

The military retirement system has always provided a powerful retention incentive, functioned as a force management tool, and supplied a mobilization base of experienced personnel. As a result of the congressionally mandated changes to the military retirement system, all members entering the Service on 1 August 1986 and after will receive approximately 28 percent less in retirement pay compared to those who entered prior to 8 September 1980. Associated potential impacts on recruitment and retention caused by changes to the retirement system must be recognized. We must also be prepared to correct adverse trends that may develop as a result of changes to the retirement system.

The overall quality of life of Service members and their families has significant influence on force quality and retention. Among the more important quality of life programs are family support centers; child care; health care; commissaries; adequate reimbursement for permanent change of station moves; spouse employment; morale, welfare, and recreation programs; and the facilities to improve living and working conditions of our people.

Families of military members play an important role in the quality of life for military personnel and serve as a vital source of strength contributing to the national defense readiness posture. The developing special programs to meet the needs of military families is crucial to the well-being of those 60 percent of our military members having family responsibilities.

## INTERNATIONAL TERRORISM

The threat of international terrorism against the United States and other nations continues to pose formidable challenges.

Targeting of US interests in Europe and the Middle East continues. These areas, along with Latin America, will probably remain the scene of the greatest number of terrorist activities against US interests.

US citizens are now targets of about 20 percent of all international terrorist incidents. In the past decade, terrorist incidents have increased in brutality and lethality. The number of international terrorist incidents has shown a general upward trend since official statistics were first compiled in 1968. As shown in Figure VI-8, the number of terrorist incidents remained relatively constant from 1979 until 1984, when a dramatic increase in international terrorist incidents occurred. Although these figures are high, they do not include local acts of violence in which the perpetrators and the victims are indigenous to a single country.

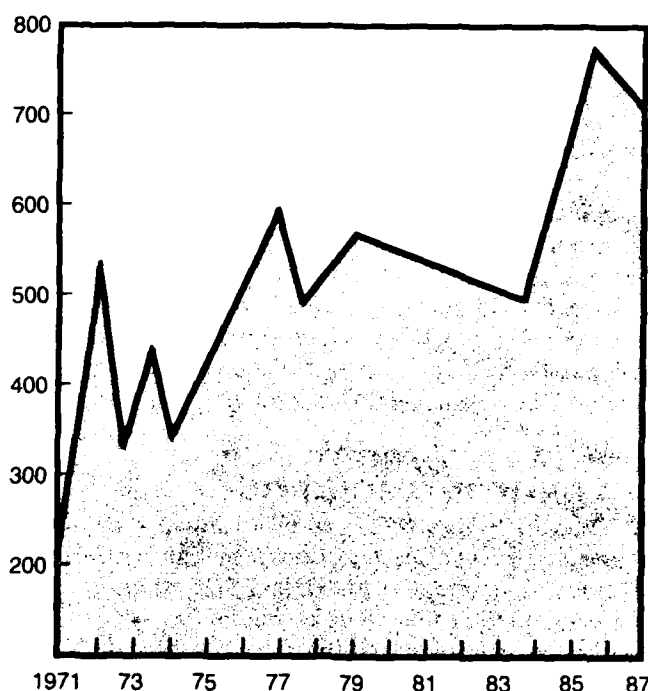
The spillover in Europe of Middle East terrorism carried out by Islamic extremists and Palestinian groups continues. These groups pose a significant threat to US interests in the Middle East and Europe and this spillover could extend to Asia as well.

Future terrorism will likely be more lethal and frequent; terrorists will use more sophisticated weapons and tactics, with high profile US symbols continuing as the preferred targets.

International connections among terrorists continue, but have been weakened. In Europe, for example, the links between terrorists in West Germany, France, and Belgium have been disrupted by effective efforts of security organizations. Coordination among leftist terrorists will continue to include US and NATO assets in their targeting. In Latin America, links also have evolved, particularly between Colombian and Ecuadoran terrorists. Insurgents in El Salvador will continue to pose the greatest threat for the United States. However, anti-US threats may also increase

## International Terrorist Incidents

1971-1987



As of 30 September 1987

FIGURE VI-8

in Honduras, Colombia, Ecuador, Peru, and Chile. In Asia, the Philippines may also emerge as a major threat area for US interests.

As in the past, support for terrorism from the Soviet Union, North Korea, Cuba, Nicaragua, and their allies will continue. Support and involvement by Iran and Libya in anti-US activities is expected.

Although international terrorism has focused primarily on targets overseas, the CONUS is not exempt from acts of terrorist violence. Moreover, as the US continues its efforts to seek out and arrest individuals involved in anti-US terrorist activity, particularly Islamic extremists and possibly some Palestinian elements, the terrorists could attempt acts here.

The United States continues to view terrorism as a serious threat. The US resolve to take all actions necessary to stop international terrorism was demonstrated by the September 1987 arrest of a Lebanese involved in terrorist activity. Intelligence collection has been increased against groups and individuals



involved in international terrorism to provide timely warning to deter and thwart terrorist acts and to contribute to a heightened security posture in order to prevent the execution of planned terrorist acts. The Services have undertaken efforts to confront the growing terrorist problem through threat-awareness training and physical security programs. The US Armed Forces have also been working closely with non-DOD and host-nation security forces to ensure maximum protection of US personnel, dependents, and facilities. The CINCs have also taken steps to strengthen joint planning for defense against terrorist actions. The Joint Chiefs of Staff are represented on the interdepartmental working group dealing with the terrorist problem. JCS representation ensures that joint military requirements and capabilities support national objectives addressing the threat of terrorism.

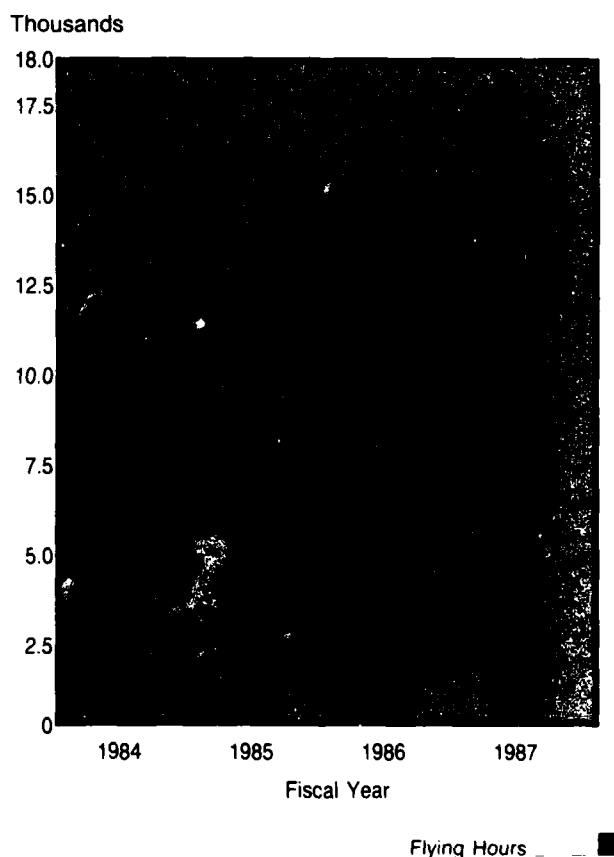
### MILITARY SUPPORT TO DRUG INTERDICTION

Drug trafficking threatens US national security in three ways: socially, economically, and militarily. Drugs pose a threat to the United States through the degrading effect they have on the moral, social, and economic well-being of the country. The politico-military dimension of the threat consists of four elements: (1) undermining friendly governments important to US security through corruption, intimidation, and economic destabilization; (2) drug linkages to insurgencies, which further threaten to destabilize these governments; (3) the threat of drug-related terrorism to US officials and citizens abroad; and (4) the degradation in military readiness and internal security of the US Armed Forces resulting from illicit drug use.

US military forces have continued to actively support law enforcement agencies (LEAs) to the maximum extent possible consistent with resource availability, national security requirements, and the needs of military preparedness. This has included surveillance; facility, communication, transportation, and intelligence support; ship services for US Coast Guard detachments and towing and escort of seized vessels; equipment loans; access to military training schools; and expert personnel assistance to the National Narcotics Border Interdiction System (NNBIS) regional centers and headquarters. US Coast Guard law enforcement detachments embarked on military ships for dedicated drug interdiction operations, and nondedicated drug interdiction operations in areas where maritime trafficking is high, have seized thousands of pounds of illegal drugs. US Coast Guard law enforcement detachments were deployed on USN

ships for 2512 days in FY 1987, almost twice as many days as in FY 1986. The number of flying hours flown by US military aircraft in FY 1987 was nearly a 9 percent increase over the 15,827 hours flown in FY 1986 in support of drug interdiction efforts (see Figure VI-9). Most FY 1987 flying hours supported US Customs Service and US Coast Guard air and maritime interdiction missions. Our military forces also provide limited but crucial support to police forces of foreign governments. US military helicopters have been used for several years in the Bahamas. Military trainers in consonance with Department of State approval and funding are training foreign military police counter-narcotics units in Bolivia and Colombia. And since 1986, helicopters have been provided to the Department of State for use by Bolivia, to provide mobility for national police in remote, inaccessible parts of the country. This transportation support has

### Military Aircraft Surveillance Missions in Support of Drug Interdiction



As of 30 September 1987

FIGURE VI-9

been invaluable in allowing these governments to make arrests and destroy drug trafficking facilities.

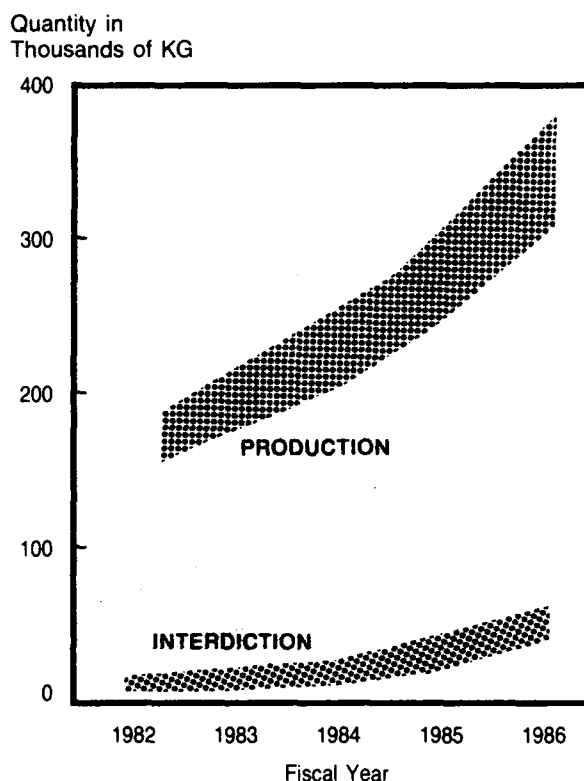
In spite of increasing DOD support of LEAs drug interdiction operations, the international cocaine industry is flourishing. According to CIA estimates, the cultivation, production, trafficking of coca products from South America, and nonstop expansion of this industry continues despite US-sponsored efforts to the contrary. In 1986 coca was cultivated at record levels in Peru, Bolivia, Colombia, and Ecuador. Further, coca cultivation is expanding at a rapid rate and all indications point to a continued surplus of cocaine on the international market for the foreseeable future. At every stage the profit margins in the cocaine industry are enormous. Though record individual seizures were made in 1987, on US streets cocaine has never been more available and the price has never been lower. Figure VI-10 depicts the cocaine growth problem.

### EUROPEAN TROOP STRENGTH

The congressionally mandated ETS ceiling continues to adversely affect European force structure, readiness, modernization, and sustainability. The ceiling ignores the increasing capabilities of the Warsaw Pact, discounts improvements made by our allies, and creates the impression that the United States is relying heavily on nuclear forces at the expense of conventional forces. Further, the ceiling will interfere with orderly adjustments required as we eliminate INF missiles under the recently concluded INF Treaty. In addition, since the Atlantic islands are included in the ceiling, it assesses a NATO penalty for CONUS defense improvements in the Atlantic islands. Conforming to the existing ceiling restricts US and NATO combat capability as we reach the limits of prudent economizing, civilianizing, and reducing troop strength to offset critical growth. As newer, more capable systems with trained personnel to support them are introduced into Europe, the ceiling mandates that other, equally needed combat assets must be returned to CONUS.

Concurrently, the Warsaw Pact is rapidly improving its conventional force capabilities, and the gap

### Estimated Cocaine Production and Interdiction (u)



As of 30 September 1987

FIGURE VI-10

between NATO and Warsaw Pact force capabilities is growing despite the increased efforts of the NATO allies. Were deterrence to fail and a Warsaw Pact attack occur, the ceiling's effect on US conventional forces could serve to lower the nuclear threshold. Arbitrary limitation of US military personnel in Europe undermines the gains made in recent years in countering the threat to NATO. It is imperative that the size and composition of our deployed forces in Europe be based upon the threat to US and allied interests, rather than on an arbitrary ceiling. There is no ceiling on Soviet forces.

## GLOSSARY

AAW	— anti-air warfare
AAV SLEP	— assault amphibian vehicle service life extension program
AAWS-M	— Anti-armor Weapon Systems-Medium
ABM	— antiballistic missile
AC	— Active component
ACCS	— Army Command and Control System
ACM	— advanced cruise missile
ADCOM	— Aerospace Defense Command
ADDISS	— Advanced Deployable Imagery Support System
ADI	— Air Defense Initiative
ADP	— automatic data processing
AEGIS	— US Navy AAW weapon system
AEW	— airborne early warning
AFAP	— artillery-fired atomic projectiles
AFATDS	— Advanced Field Artillery Tactical Data System
AFSATCOM	— Air Force Satellite Communications System
AFP	— Armed Forces of the Philippines
AFV	— Armored Family of Vehicles
AJ	— antijam
ALCM	— air-launched cruise missile
ALMV	— air-launched miniature vehicle
AMRAAM	— advanced medium-range air-to-air missile
ANMCC	— Alternate National Military Command Center
ANZUS	— Australia, New Zealand, and United States
APF	— afloat pre-positioning force
AOR	— area of responsibility
ARF	— air reserve forces
ASARS	— Advanced Synthetic Aperture Radar System
ASAS	— all-source analysis system
ASAT	— antisatellite
ASEAN	— Association of Southeast Asian Nations
ASM	— air-to-surface missile
ASROC	— antisubmarine rocket
ASUW	— antisurface warfare
ASW	— antisubmarine warfare
ATACMS	— army tactical missile system
ATGM	— antitank guided missiles
ATB	— advanced technology bomber
ATGM	— antitank guided missile
AUTODIN	— Automatic Digital Network
AUTOSEVOCOM	— Automatic Secure Voice Communications
AUTOVON	— Automatic Voice Network
AVN	— aviation
AWACS	— Airborne Warning and Control System
BB	— battleship
BMD	— ballistic missile defense
BMEWS	— Ballistic Missile Early Warning System
BMP	— amphibious armored infantry combat vehicle (Soviet)
BSTS	— Boost Surveillance and Tracking System
BN TF	— Battalion Task Force
C <sup>2</sup>	— command and control

C <sup>3</sup>	— command, control, and communications
C <sup>3</sup> CM	— command, control, and communications countermeasures
C <sup>3</sup> I	— command, control, communications, and intelligence
CA	— civic affairs
CD	— Civil Defense or Conference on Disarmament
CDI	— Conventional Defense Improvements
CDIP	— Combined Defense Improvement Project
CDE	— Conference on Disarmament in Europe
CENTAG	— Central Army Group (NATO forces in Europe)
CEP	— circular error probable
CG	— guided missile cruiser
CGS	— CONUS ground station
CHAMPUS	— Civilian Health and Medical Program of the Uniformed Services
CINC <sub>s</sub>	— Commander in Chief of Unified and Specified Commands
CINCLANTFLT	— Commander in Chief, Atlantic Fleet
CINCUSNAVEUR	— Commander in Chief, US Naval Forces, Europe
CINCMAC	— Commander in Chief, Military Airlift Command
CINCSAC	— Commander in Chief, Strategic Air Command
CINCFOR	— Commander in Chief, Forces Command
CJCS	— Chairman, Joint Chiefs of Staff
CMC	— Cheyenne Mountain Complex
COB	— collocated operating base
COBRA DANE	— space surveillance sensor
CONUS	— continental United States
CR	— combat rescue
CRAF	— Civil Reserve Air Fleet
CRAFTS	— Civil Reserve Auxiliary Fleet Ships
CS/CSS	— <i>Combat Service/Combat Service Support</i>
CSBM	— confidence and security-building measures
CSCE	— Conference on Security and Cooperation in Europe
CTB	— comprehensive test ban
CTOL	— conventional takeoff and landing
CV	— conventionally-powered aircraft carrier or cargo variant
CVBG	— carrier battle group
CVN	— nuclear-powered aircraft carrier
CVW	— carrier air wing
CW	— chemical warfare
CY	— calendar year
DA	— direct action
DCA	— Defense Cooperation in Armaments or dual-capable aircraft
DCS	— Defense Communications System
DD	— destroyer
DDC	— Data Distribution Center
DDG	— guided-missile destroyer
DDN	— Defense Data Network
DECA	— Defense Economic Cooperation Agreements
DEW	— Distant Early Warning
DIVAD	— Division Air Defense
DOE	— Department of Energy
DRB	— Defense Resources Board
DSCS	— Defense Satellite Communications System
DSN	— Defense Switched Network
DWT	— division wing team

ECCM	— electronic counter-countermeasures
ECM	— electronic countermeasures
EHF	— extremely high frequency
ELF	— extremely low frequency
ELINT	— electronic intelligence
ELV	— expendable launch vehicle
EMP	— electromagnetic pulse
EOD	— explosive ordnance disposal
EPDS	— electronic processing dissemination system
ESF	— Economic Support Fund
ETS	— European troop strength
EW	— electronic warfare
FAADS	— forward area air defense system
FID	— foreign internal defense
FLTSATCOM	— Fleet Satellite Communications System
FMS	— foreign military sales
FMSCR	— foreign military sales credit
FOC	— full operational capability
FOFA	— follow-on-forces attack
FOL/FOTL	— follow-on-to-LANCE
FORSCOM	— Forces Command
FRG	— Federal Republic of Germany
FY	— fiscal year
GLCM	— ground-launched cruise missile
GNP	— gross national product
GPS	— global positioning system
GSM	— ground station module
GWEN	— Groundwave Emergency Network
HARM	— high-speed antiradiation missile
HELMINERON	— helicopter mine countermeasures squadron
HELPS	— heavy equipment lift pre-positioning ship
HF	— high frequency
HLTF	— high-level task force
HNS	— host-nation support
HQ	— headquarters
HSDG	— high school diploma graduate
HTKP	— hard-target kill potential
HUMINT	— human-resource intelligence
HTMD	— high technology motorized division
IASA	— Integrated AUTODIN System Architecture
ICBM	— intercontinental ballistic missile
IFF	— identification, friend or foe
IMA	— individual mobilization augmentee
IMET	— International Military Education and Training
INEWS	— Integrated Electronic Warfare System
INF	— intermediate-range nuclear forces
ING	— Inactive National Guard
IOC	— initial operation capability
IR	— infrared
IRR	— Individual Ready Reserve
I-S/A AMPE	— inter-service/agency automated message
IUS	— inertia upper stage
I&W	— indications and warnings

JCS	— Joint Chiefs of Staff
JDMP	— Joint Deployment Master Plan
JDS	— Joint Deployment System
JEWC	— Joint Electronic Warfare Center
JFDP	— Joint Force Development Process
JINTACCS	— Joint Interoperability of Tactical Command and Control Systems
JOPES	— Joint Operation Planning and Execution System
JRCS	— jam resistant secure communications
JRMB	— Joint Requirements and Management Board
JROC	— Joint Requirements Oversight Council
JSOA	— Joint Special Operations Agency
JSS	— Joint Surveillance System
JSTARS	— Joint Surveillance and Target Attack Radar System
JTACMS	— Joint Tactical Cruise Missiles
JTIDS	— Joint Tactical Information Distribution System
JTTP	— joint tactics, techniques, and procedures
JVX	— advanced vertical lift aircraft
km	— kilometers
kt	— kilotons
LANTIRN	— low-altitude night targeting infrared navigation
LARF	— Lebanese Armed Revolutionary Faction
LASERCOM	— laser communications
LASH	— lighter aboard ship
LAV	— light armored vehicle
LCAC	— landing craft, air cushion
LCU	— landing craft, utility
LEASAT	— Leased Satellite Communications Systems
LF	— low frequency
LIC	— low-intensity conflict
LOC(s)	— line(s) of communication
LOTS	— logistics over the shore
LPARS	— large phased-array radar
LRI	— long-range international
LRINF	— long-range intermediate-range nuclear forces
LSVs	— logistics support vessels
LVT	— landing vehicle, tracked
M-day	— Mobilization day
MAB	— Marine amphibious brigade
MAC	— Military Airlift Command
MACOM	— Major Army Command
MAGTF	— Marine air-ground task force
MAP	— Military Assistance Program; Modern Aids to Planning
MBFR	— mutual and balanced force reductions
MCM	— mine countermeasures
MEF	— Marine Expeditionary Force
MEU	— Marine Expeditionary Unit
MEU/SOC	— Marine Expeditionary Unit Special Operations Capability
MFO	— Multinational Force and Observers
MILCON	— military construction
MIRV	— multiple independently targetable reentry vehicle
MRLS	— multiple-launch rocket system
mm	— millimeters
MNF	— Multinational Force

MOA	— memorandum of agreement
MPA	— maritime patrol aircraft
MPF	— multipurpose facility
MPS	— maritime pre-positioning ship
MRBM	— medium-range ballistic missile
MSE	— mobile subscriber equipment
MSM	— minesweeper hunter
mt	— metric ton; megaton
MTI	— moving target indicator
MTM/D	— million-ton-miles per day
MV	— miniature vehicle
NATO	— North Atlantic Treaty Organization
NAVSPECWAR	— Navy Special Warfare
NBC	— nuclear, biological, and chemical
NCA	— National Command Authorities
NCMC	— NORAD Cheyenne Mountain Complex
NDRF	— National Defense Reserve Fleet
NDS	— nuclear detonation detection system
NEACP	— National Emergency Airborne Command Post
NETS	— National Emergency Telecommunications System
NIS	— NATO identification system
nm	— nautical miles
NMCC	— National Military Command Center
NMCS	— National Military Command System
NNBIS	— National Narcotics Border Interdiction System
NORAD	— North American Aerospace Defense Command
NORTHAG	— Northern Army Group (NATO forces in Europe)
NPES	— Nuclear Planning and Execution System
NSC	— National Security Council
NSNF	— nonstrategic nuclear forces
NSWP	— Non-Soviet Warsaw Pact
NST	— Nuclear and Space Talks
NTPF	— near-term pre-positioning force
NUDET	— nuclear detonation detection
NWS	— North Warning System
OAS	— Organization of American States
OBU	— Ocean Surveillance Information System Basestone Upgrade
OGS	— overseas ground station
OPDS	— offshore POL discharge system
OPLAN	— operation plan
OPSEC	— operations security
OTH-B	— over-the-horizon backscatter
PACAF	— Pacific Air Forces
PAM	— Payload Assist Module
PARCS	— Perimeter Acquisition Radar Attack Characterization System
PAVE PAWS	— phased-array missile warning system
PCS	— permanent change of station
PGM	— precision guided missile
PJH	— PLRS-JTIDS hybrid
PKO	— peacekeeping operations
PLRS	— Position Location Reporting System
PLSS	— Precision Location Strike System
POL	— petroleum, oils, and lubricants

POM	— Program Objective Memorandum
POMCUS	— pre-positioning of materiel configured to unit sets
PPBS	— Planning, Programming, and Budgeting System
PPP	— pre-positioning procurement package
PRC	— People's Republic of China
PREPO	— pre-positioning
psi	— pounds per square inch
PSYOP	— psychological operations
PWRMS	— pre-positioned war reserve materiel stocks
P1a	— PERSHING 1a
R&D	— research and development
RC	— Reserve component(s)
RCS	— radar cross-section
RDT&E	— research, development, test and evaluation
RECCE	— reconnaissance
RECON	— reconnaissance
REFORGER	— Return of Forces to Germany
RIMS	— Revised Intertheater Mobility Study
ROK	— Republic of Korea
RO/RO	— roll-on/roll-off
ROS	— reduced operating status
RPV	— remotely piloted vehicle
RRF	— Ready Reserve Force
RSI	— rationalization, standardization, and interoperability
RSP	— Red Switch Project
RV	— reentry vehicle
SAC	— Strategic Air Command
SACLANT	— Supreme Allied Commander Atlantic
SACEUR	— Supreme Allied Commander Europe
SADARM	— sense and destroy armor munition
SAG	— surface action group
SAM	— surface-to-air missile
SATCOM	— satellite communication
SCP	— Secure Conferencing Project
SDAF	— Special Defense Acquisition Fund
SDI	— Strategic Defense Initiative
SEAL	— Sea, Air, and Land
SELRES	— Selected Reserve
SHF	— super-high frequency
SICBM	— small intercontinental ballistic missile
SINCGARS	— Single Channel Ground-Airborne Radio System
SIOP	— Single Integrated Operational Plan
SITREP	— Situation Report
SLBM	— sea-launched ballistic missile
SLCM	— sea-launched cruise missile
SLC	— satellite laser communications
SLEP	— Service Life Extension Program
SLOC(s)	— sea line(s) of communication
SNA	— Soviet Naval Aviation
SNDV	— strategic nuclear delivery vehicles
SNF	— short-range nuclear forces
SO	— special operations



SOF	— special operations forces
SOVMEDRON	— Soviet Mediterranean Squadron
SPS	— simplified processing station
SRAM	— short-range attack missile
SRBM	— short-range ballistic missile
SRINF	— shorter-range intermediate-range nuclear forces
SRM	— shorter-range missiles
SRT(s)	— strategic relocatable targets
SSBN	— nuclear-powered fleet ballistic missile submarine
SSGN	— guided-missile submarines
SSM	— surface-to-surface missile
SSN	— nuclear-powered attack submarine
SSTS	— Space Surveillance and Tracking System
START	— Strategic Arms Reduction Talks
STS	— Space Transportation System
STANAG	— standardization agreement
SUBROC	— submarine rocket
SURTASS	— surface towed array sonar system
SVIP	— Secure Voice Improvement Program
SWA	— Southwest Asia
TACIES	— tactical imagery exploitation system
TACMS	— tactical missile system
TACS	— tactical air control system
TAH	— hospital ship
TARP	— tactical air reconnaissance pod system
TASMO	— tactical air support of maritime operations
TAVB	— aviation logistics support ship
TEL	— transporter-erector launcher
TEREC	— tactical electronic reconnaissance
TFW	— tactical fighter wing
TLAM/C	— TOMAHAWK Land Attack Cruise Missile Conventional
TLAM/N	— TOMAHAWK Land Attack Cruise Missile Nuclear
TOW	— tube-launched, optically tracked, wire-guided missile
TRS	— tactical reconnaissance squadron
TW/AA	— tactical warning and attack assessment
UHF	— ultra high frequency
UK	— United Kingdom
UN	— United Nations
UNTSO	— UN Truce Supervision Organization
USAID	— US Agency for International Development
USCENTCOM	— US Central Command
USCINCCENT	— Commander in Chief, US Central Command
USCINCEUR	— US Commander in Chief, Europe
USCINCLANT	— Commander in Chief, US Atlantic Command
USCINCPAC	— Commander in Chief, US Pacific Command
USCINCSO	— Commander in Chief, US Southern Command
USCINCSpace	— Commander in Chief, US Space Command
USCINCTrans	— Commander in Chief, US Transportation Command
USSPACECOM	— US Space Command
USEUCOM	— US European Command
USLANTCOM	— US Atlantic Command
USPACOM	— US Pacific Command

USSOCOM	— US Special Operations Command
USSOUTHCOM	— US Southern Command
USSR	— Union of Soviet Socialist Republics
USTRANSCOM	— US Transportation Command
UW	— unconventional warfare
VAR	— cargo variant
VHA	— variable housing allowance
VHF	— very high frequency
VLF	— very low frequency
VLS	— Vertical Launch System
V/STOL	— vertical/short takeoff and landing
VTOL	— vertical takeoff and landing
WABNRES	— WWMCCS Airborne Resources
WHNS	— wartime host-nation support
WIS	— WWMCCS Information System
WRSA	— war reserve stock for allies
WWABNCP	— Worldwide Airborne Command Post
WWABNRES	— WWMCCS Airborne Resources
WWDSA	— Worldwide Digital System Architecture
WWMCCS	— Worldwide Military Command and Control System

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